

**IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE**

**NEC Corporation,**

Plaintiff,

v.

**Peloton Interactive, Inc.**

Defendant.

C.A. No. 22-987-CFC

**TRIAL BY JURY DEMANDED**

**FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT**

1. Plaintiff, NEC Corporation (“Plaintiff” or “NEC”) files this First Amended Complaint for patent infringement and demand for jury trial against Defendant Peloton Interactive, Inc. (“Defendant” or “Peloton”), and alleges as follows:

**NATURE OF THE ACTION**

2. This is an action for patent infringement under the Patent Laws of the United States, Title 35 United States Code (“U.S.C.”) against Peloton for infringement of U.S. Patent No. 8,752,101 (the “’101 Patent”), U.S. Patent No. 8,909,809 (the “’809 Patent”), and U.S. Patent No. 9,769,427 (the “’427 Patent”) (collectively the “patents-in-suit”), which are attached as Exhibits A, B, and C, respectively, and incorporated herein by reference, pursuant to 35 U.S.C. § 271, to recover damages, attorney’s fees, and costs.

**THE PARTIES**

3. Plaintiff NEC is a corporation organized under the laws of Japan, with its principal place of business at 7-1, Shiba 5-chome Minato-ku, Tokyo 108-8001 Japan.

4. Upon information and belief, Defendant Peloton Interactive, Inc. is a corporation organized under the laws of the State of Delaware, with its principal place of business at 441 Ninth Avenue, 6th Floor, New York, New York 10001.

### **JURISDICTION AND VENUE**

5. This action arises under the patent laws of the United States, 35 U.S.C. § 101, *et seq.* This Court's jurisdiction over this action is proper under relevant statutes, including 35 U.S.C. § 271, *et seq.*, 28 U.S.C. § 1331 (federal question jurisdiction), and 28 U.S.C. § 1338 (jurisdiction over patent actions). The Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has general personal jurisdiction over Defendant at least because Defendant is incorporated in Delaware.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. § 1400(b).

### **FACTUAL ALLEGATIONS**

8. Founded in 1899 and based in Tokyo, Japan, NEC (Nippon Electric Company) has throughout its 120-year history been a world leader and innovator across a variety of technical industries, including in electronic devices, computing, computer displays, semiconductors, mobile phones and communications, and most recently, software and artificial intelligence solutions. Over the years, NEC has expended significant resources on research, development, and innovation, and on capturing and protecting the fruits of those efforts in patent applications filed around the world. The patents-in-suit, which provide improved multimedia content delivery systems and methods, were born from this history of innovation.

9. NEC is the owner of the patents-in-suit with all substantial rights, including the exclusive right to enforce, sue, and recover damages for past and future infringements.

10. The claims of the patents-in-suit are directed to patent eligible subject matter under 35 U.S.C. § 101. They are not directed to any abstract idea, and the technologies covered by the claims comprise content delivery and distribution systems and/or consist of ordered combinations

of features and functions that, at the time of the invention, were not, alone or in combination, well-understood, routine, or conventional.

11. On information and belief, Defendant offers content streaming services—such as the “Peloton App”—that deliver content data from a transmission device to one or more reception devices and manufactures and/or sells products—such as the “Peloton Bikes” and “Peloton Treads”—that use such content streaming services (together, the “Accused Products”). For example, the Accused Products use a content distribution method applied to a distribution system including a transmission device and a reception device.

12. On information and belief, the Accused Products also include a content delivery system that includes a server device and a client device configured to be communicable with each other. The delivery system also comprises an application server system and one or more connection control servers.

13. On information and belief, the Accused Products also connect a client device, such as a laptop, tablet, cellphone, a Peloton Bike, or a Peloton Tread to a Peloton content delivery server. The content delivery server then requests content from a server, and then transmits that content to the user device, along with sub content that is overlaid onto the content.

14. The patents-in-suit are described briefly as follows:

**The ’101 Patent**

15. On June 10, 2014, the United States Patent and Trademark Office (“USPTO”) duly and legally issued the ’101 Patent, entitled “DISTRIBUTION SYSTEM” after a full and fair examination. The ’101 Patent is attached hereto as Exhibit A and incorporated herein as if fully rewritten.

16. Claim 11 of the ’101 Patent recites:

“11. A distribution method applied to a distribution system including a transmission device and a reception device configured to be capable of communicating with each other, the distribution method comprising:

transmitting content data, which is one content coded with any one code rate of a plurality of code rates different from each other, to the reception device, by the transmission device;

while receiving the content data transmitted by the transmission device, storing received data of the content data into a storage device and also reproducing the content based on the stored data, by the reception device;

determining the code rate based on a remaining time before reproduction start time set as time at which the reception device starts reproduction of the content from a present moment, and based on an available reproduction time, which is a time available for reproducing the content based on the content data stored in the storage device of the reception device;

changing the code rate of the content data to be transmitted to the reception device to the determined code rate, by the transmission device; and

starting reproduction of the content at the set reproduction start time, by the reception device.” *See* Exhibit A.

17. At the time of the inventions, a number of technical problems existed in streaming networks. For example, end users frequently did not have consistent bandwidth or quality of service. Declaration of Dr. Michael Sprenger, “Sprenger Decl.” ¶ 25-31; Exhibit A at 20:48-50. As a result, without adjustment to streaming methodology, users with lower quality of service or inconsistent bandwidth experienced undesirable buffering, unsteady or unstable playback resolutions, and/or excessively reduced quality to accommodate the weakest infrastructure. Sprenger Decl. ¶ 29; Exhibit A at 1:62-2:21. These problems are unique to the streaming and content delivery environment as the problems arise from technical constraints and the underlying operations associated with transmitting content over a network are not, for example, longstanding human activity or mental processes. Sprenger Decl. ¶ 31; Exhibit A at 1:62-2:21.

18. By way of further example, user devices (or reproduction devices) with different design and different capabilities were being rapidly developed and updated. Sprenger Decl. ¶ 30; Exhibit A at 5:27-35. As a result, users with different devices or versions of hardware or software

had different streaming experiences, including experiencing better (or worse) network connectivity, and buffering while viewing streamed content. Sprenger Decl. ¶¶ 29-30.

19. At the time of the inventions, other methods of addressing the technical problems existed, such as downloading the media completely before playback or reducing bit rate (and therefore quality) for the entire stream and/or all users. *Id.* ¶ 26. These other solutions had drawbacks, such as delaying the ability to view or otherwise consume content or reducing the quality to an unnecessary degree. *Id.* ¶¶ 26, 42; Exhibit A at 20:48-50.

20. The systems, devices, and methods of the '101 Patent improved upon other streaming methods at the time. In particular, the '101 Patent itself identifies two previous methods that use alternative mechanisms, which had shortcomings because “the amount of data that the reception device receives from the transmission device per unit time (i.e., communication speed) varies depending on the status of use of a communication line, and so on.” Sprenger Decl. ¶¶ 31, 44; Exhibit A at 1:54-58. The inability to adequately adapt to communication speed changes due to varying networking conditions resulted in cases where the available reproduction time was not able to reach a sufficient level by the start time thus delaying the start time. Sprenger Decl. ¶ 44; Exhibit A at 1:58-64.

21. The inventions claimed in the '101 Patent are new, inventive solutions that allow each user to be able to have the best streaming experience regardless of different equipment, different service providers, different quality of service, and the like and without the drawbacks of the other methods available at the time of the invention for addressing the above-referenced problems. Sprenger Decl. ¶¶ 31-34; Exhibit A at 2:4-17.

22. The claimed solutions are rooted in technology. The inventions use operational characteristics of the streaming system, including the amount of content stored in the buffer or

other storage of the user device (or reproduction device) as a function of time for playback (or reproduction) of that content, the amount of content remaining to be transmitted and stored on the device, and the start time of the playback of the content to determine and set the bit (or code) rate of the remaining data to be transferred to ensure that the playback of the content on the user device does not outpace the transmission capabilities and buffering or storage capabilities of the user device. *Id.* at 1:65-2:3, 25:60-26:16; Sprenger Decl. ¶¶ 33-35. The recited technical solutions thereby avoid problems like unsteady or unstable playback quality, pausing of playback to wait for more content, and delayed start of playback to wait for the entire content stream to be downloaded. Sprenger Decl. ¶¶ 33-35.

23. The claimed solutions recite more than just adjusting the speed or size of data transmissions. The claims recite specific processes to determine code rate as a function of the set playback start time and the amount of content buffered or stored on the user device and the time it will take to play that stored information and then changing the code rate to the determined rate to ensure that playback does not exceed the system's ability to transmit the remaining content data stream and do not merely recite results. *See* Exhibit A at 24:38-29:24.

24. The claimed solutions are not directed to longstanding human activity as the claims recite changing network operations by calculating code rate using specific technical parameters. Furthermore, code rates are a distinctly technical concept as it is the density of bits relative to a period of time. Indeed, the specification is clear on this point, stating, for example, that “[t]he code rate represents the data amount (the data size, e.g., the number of bytes) of content data for reproducing content at constant speed (reproducing content at 1× speed) for a unit time (e.g., one second).” Exhibit A at 7:8-11. To illustrate the impact of the code rate, the density of content data is proportional to the resolution of playback. Thus, in addition to humans not

changing network and device operation and performance during streaming of digital content over a network, humans also do not change the code rates of their own speech because to do so would require degrading or improving the quality of their speech, which is nonsensical. The lack of connection to longstanding human activity is further illustrated by claims that recite the technical operation changes for multiple devices or users on the network, synchronizing playback among multiple users or devices, applying further specific rules to select code rates, and the like.

25. For example, Claim 11 of the '101 Patent recites a non-abstract method for distributing content data including a transmission device and a reception device that solves the technical problems described within the patent, *see, e.g.*, Exhibit A at 1:42-2:17, among others. It does so by reciting the process of determining the bit rate for a particular user device using operational characteristics of the device—time remaining before the device begins reproducing received content and playback time for reproducing the stored (or buffered) content. *See id.* at 26:5-14. The claim further recites using the determined rate to change the technical operation of the network and performance of the reproduction device by adjusting the code rate of the content data to the determined rate so that the user receives all content, at an appropriate resolution and an appropriate time, without overloading the bandwidth of the user's device and causing unsteady or unstable playback resolutions, buffering, or other delays in delivery. *Id.* at 26:1-4; Sprenger Decl. ¶ 35. Thus, Claim 11 recites more than results of the method and more than simply sending and receiving data. It instead recites both how the code rate is determined through the recited specific rules and how the operation of the network and reproduction device is changed as a result of the recited method to improve the operation of the user device (e.g., less jitter, delay, pausing) and improve the user experience. Thus, at least Claim 11 is not directed to an abstract idea and is inventive.

26. Claim 11 also recites the specific technical environment that makes express that the claimed invention solves a technical problem. For example, Claim 11 recites “one content coded with any one code rate of a plurality of code rates different from each other,” which indicates that the content data has multiple versions of the content data each having different code rates, which means that a version needs to be picked. Exhibit A at 25:64-67. If the wrong version is used due to insufficient determination of the best rate for the particular technical environment at the time or streaming, the penalty is poor performance at the client device. Exhibit A at 1:54-64; Sprenger Decl. ¶ 34.

27. The remaining limitations of Claim 11 provide a technical solution that answer how and why a particular version is selected and implemented. Claim 11 recites “determining the code rate based on a remaining time before reproduction start time set as time at which the reception device starts reproduction of the content from a present moment, and based on an available reproduction time, which is a time available for reproducing the content based on the content data stored in the storage device of the reception device,” to specify how the code rate can be determined “in order to allow the content data to be reliably transmitted and reproduced in the presence of varying network quality” as confirmed by expert testimony. Sprenger Decl. ¶ 35. Accordingly, “the ‘remaining reproduction time’ is a dynamic variable that needs to be determined at discrete moments (e.g., based on the amount of data in the buffer of the reception device) and the remaining time before reproduction start time is similarly constantly changing as start time approaches.” *Id.*

28. The ‘101 Patent specification confirms the technical solution to the technical problem. For example, the specification explains that as a result of practicing the claimed invention, “it is possible to cause the reception device to securely start reproduction of the content



at the set reproduction start time while avoiding meaninglessly lowering the code rate.” Exhibit A at 19:53-55. The specification further explains that “an object of the present invention is to provide a distribution system capable of solving the above-mentioned problems, ‘the code rate may be [set to] be extremely high’ and ‘the reception device [may be] unable to start reproduc[ing] content a[t a] set reproduction start time.’” *Id.* at 2:21-25.

29. As a result of the recited altered technical operation of the streaming system using the recited method, a user device is able to play (or reproduce) the content with increased stability in the playback resolution and little to no pausing. Sprenger Decl. ¶ 35; Exhibit A at 2:21-25. Thus, the solution to the technical problems is found in the language of at least Claim 11.

30. The inventiveness of these technical solutions recited by the claims of the ’101 Patent is evidenced by what a provider of the underlying accused functionality has said about the accused functionality. Even years after the invention date, JW Player CEO, Dave Otten, highlighted the significance of the infringing, claimed process that prioritizes video start time: “Video start speed is of the utmost importance to our customers, especially when their users are watching video on mobile devices. Every second of delayed start or buffering can cost them millions of dollars of lost revenue.” Exhibit H at 2. The same article also notes the importance of maintaining the highest resolution (which is proportional to bit rate), further evidencing that the claimed adaptive bit rate process that balances reducing delayed video start time and quality is inventive. *Id.* at 1.

31. The specific elements of Claim 11 of the ’101 Patent were an unconventional arrangement of elements compared to prior art content delivery systems and were not well-understood or routine. As also discussed above in Paragraphs 19-20, at the time of the invention, other methods attempted to solve the problem differently. For example, Claim 11 of the ’101 Patent

was able to unconventionally change the code rate of the content data to be transmitted to the reception device as opposed to, for example, preventing playback until all content data is received or causing a pause in playback while additional data is received and prepared for playback. Claim 11 is similarly inventive over prior methods that reduced the quality of the entire content stream. Sprenger Decl. ¶¶ 42-45.

32. At least the “determining the code rate based on a remaining time before reproduction start time set as time at which the reception device starts reproduction of the content from a present moment, and based on an available reproduction time” and “changing the code rate of the content data to be transmitted to the reception device to the determined code rate, by the transmission device” limitations are unconventional and inventive because adjusting the code rate based on a remaining time before reproduction start time and an available reproduction time were not well understood or routine at the time of the invention. Sprenger Decl. ¶¶ 43-44.

33. The ordered combination of the limitations of Claim 11 are unconventional and inventive because first determining an available reproduction time and then next determining an available time before reproduction start time to calculate an optimal code rate and then using the calculated code rate to change the operation of the transmission device and thereby ensuring that a buffer of the reception device is filled as efficiently as possible with the best possible code rates (and thereby resolutions) was not well understood or routine at the time of the invention. Sprenger Decl. ¶ 43. The specification also confirms that the limitations and ordered combinations are inventive over prior methods. Exhibit A at 2:21-21-25, 19:53-55, and 20:48-50; Sprenger Decl. ¶¶ 36-44. Thus, at least Claim 11 is inventive and patent eligible under Section 101.

34. By way of further example of the subject matter eligibility of the ’101 patent claims, claims 12, 15, and 14 are also non-abstract and recite inventive concepts.

35. Dependent Claim 12 recites a technical solution to a technical problem that is not abstract. For example, Claim 12 recites that the code rate will become smaller (e.g., resulting in a shorter time to transmit or download) as “the available reproduction time becomes shorter than a target available reproduction time” and “becoming smaller as the remaining time becomes shorter.” The ongoing adjustment to code rate solves the problem of avoiding buffering or skipping segments as the technical conditions change over the course of the steaming session—problems which are compounded when, for example, the streaming session is for a live stream or for a group. Sprenger Decl. ¶ 47.

36. Further, dependent Claim 12 recites an additional inventive solution to a technical problem. The requirement of use of a target reproduction time in addition to Claim 11’s inventive process to factor to determine the bit rate was also not routine or well understood in the field at the time of the invention. Sprenger Decl. ¶ 47. Thus, at least Claim 12 is not directed to an abstract idea and is inventive.

37. Claim 15 recites a technical solution to a technical problem that is not abstract. Claim 15 adds to the method of Claim 11: “including a plurality of the reception devices” by “matching reproduction positions of the content to be reproduced by the plurality of the reception devices, respectively, with each other among the plurality of the reception devices.” The claim therefore ties the claim to an environment where a provider wants to synchronously stream to a plurality of users. By adding the matching of the operational characteristics of “reproduction positions” for multiple client devices, the technical problems solved by Claim 11 are solved for multiple devices and the problem of synchronizing streams for multiple users—each potentially with different network capabilities, device capabilities, and code rates—are solved. Sprenger Decl. ¶ 48.

38. Further, dependent Claim 15 also recites an additional inventive solution to a technical problem. Claim 15 recites the additional step of “matching reproduction positions of the content to be reproduced by the plurality of the reception devices, respectively, with each other among the plurality of the reception devices,” which was not routine or well understood in the field at the time of the invention. Sprenger Decl. ¶ 48. Claim 15 adds a requirement that the reproduction position—a technical characteristic of the client devices—be matched to provide synchronization on top of varying code rates set as a result of the inventive process of Claim 11. The addition of steps to synchronize multiple devices operating under different conditions with different capabilities and with determined bit rates add processing and networking overhead to the stream. Sprenger Decl. ¶ 48. At the time of the invention and given the state of networks and devices at that time, it would have been unconventional to add complications and overhead to a streaming system. Sprenger Decl. ¶ 48. Thus, at least Claim 15 is not directed to an abstract idea and is inventive.

39. Claim 14 recites a technical solution to a technical problem that is not abstract. Claim 14 solves the additional technical problem of changing network and client devices during a stream by “determining the code rate with every change period set in advance.” Because network conditions are continuously changing, adjusting the code rate at preset intervals ensures that the poor performance due to deterioration of the network and device conditions over the course of a stream is avoided and that the code rate is not set unnecessarily low if conditions improve such that the stream quality is unnecessarily low. Sprenger Decl. ¶ 49.

40. Further, dependent Claim 14 also recites an additional inventive solution to a technical problem. Claim 14 recites the additional step of “determining the code rate with every change period set in advance,” which was not routine or well understood in the field at the time of

the invention. Adding adjustment to code rates over the course of a streaming session adds to processing and network overhead. Sprenger Decl. ¶ 49. At the time of the invention and given the state of networks and devices at that time, it would have been unconventional to add complications and overhead to a streaming system. Sprenger Decl. ¶ 49. Thus, at least Claim 14 is not directed to an abstract idea and is inventive.

### **The '809 Patent**

41. On December 9, 2014, the USPTO duly and legally issued the '809 Patent, entitled "DELIVERY SYSTEM, DELIVERY METHOD, SERVER DEVICE, PROGRAM, AND CLIENT DEVICE" after a full and fair examination. The '809 Patent is attached hereto as Exhibit B and incorporated herein as if fully rewritten.

42. Claim 1 of the '809 Patent recites:

"1. A delivery system including a server device and a client device configured to be communicable with each other,  
     the server device being configured to be able to transmit, to the client device, content data in which a piece of content is encoded at an arbitrary one of a plurality of different bit rates;  
     the delivery system comprising:  
         a remaining reproduction time acquisition unit for acquiring remaining reproduction time that is a period of time during which the content can be reproduced based on a portion of the data stored in the storage device of the client device that has not been reproduced; and  
         a bit rate changing unit for calculating, according to a predetermined correction amount calculation procedure, a correction amount for correcting the bit rate of the content data transmitted by the server device based on the acquired remaining reproduction time and a preset target value so as to approximate the remaining reproduction time to the target value, and changing the bit rate based on the calculated correction amount,  
     the bit rate changing unit being configured to calculate, when the bit rate is within a predetermined correction amount reducing range, a correction amount having a smaller magnitude than a magnitude of the correction amount calculated according to the correction amount calculation procedure." See Exhibit B.

43. As also discussed above, at time of invention, a number of technical problems existed in streaming networks. For example, end users frequently did not have consistent

bandwidth or quality of service. Exhibit B at 1:42-56. As a result, without adjustment to streaming methodology, users with lower quality of service or inconsistent bandwidth experienced undesirable buffering, unsteady or unstable playback resolutions, and/or excessively reduced quality to accommodate the weakest infrastructure. Sprenger Decl. ¶¶ 25-30 and 52-55; Exhibit B at 1:42-47. The problems are unique to the streaming and content delivery environment as the problems arise from technical constraints and the underlying operations associated with transmitting content over a network are not, for example, longstanding human activity or mental processes. *Id.* at 4:21-24; Sprenger Decl. ¶¶ 55-56.

44. By way of further example, user devices (or client devices) with different designs and different capabilities were being rapidly developed and updated. Sprenger Decl. ¶ 52; Exhibit B at 1:13-36. As a result, users with different devices or versions of hardware or software had different streaming experiences, including experiencing fluctuations in the quality of the playback, buffering, and other delays in receiving their streaming content. Sprenger Decl. ¶¶ 54-55; Exhibit B at 11:15-21.

45. At the time of the invention, other methods of addressing the technical problems existed, such as downloading the media completely before playback or reducing resolution or audio quality for all of the content for the entire stream. Sprenger Decl. ¶ 65. These other solutions had drawbacks, such as delaying the ability to view or otherwise consume the content or reducing the quality to an unnecessary degree. *Id.* For example, the '809 Patent specification confirms that in alternative content data delivery systems, the delivery to the client device can be interrupted when the remaining reproduction time of the content becomes too short. Exhibit B at 1:31-33.

46. The systems, devices, and methods of the '809 Patent improved upon other streaming methods at the time. In particular, the '809 Patent itself identifies a previous method

that used an alternative method, but it had shortcomings, in part, because it caused the bit rate to fluctuate constantly resulting in a decreased quality. Sprenger Decl. ¶ 57; Exhibit B at 1:41-47. The inability to adequately adapt to communications speed changes due to varying networking conditions resulted in cases where the available reproduction time was not able to reach a sufficient level by the start time thus delaying the start time. Sprenger Decl. ¶ 65; Exhibit A at 1:58-64.

47. The inventions claimed in the '809 Patent are new, inventive solutions that allow each user to be able to have the best streaming experience regardless of different equipment, different service providers, different quality of service, and the like and without the drawbacks of the other methods available at the time of the invention for addressing the problems. Sprenger Decl. ¶¶ 55-56; Exhibit B at 1:53-63.

48. The claimed solutions are rooted in technology. The inventions use operational characteristics of the streaming system, including the amount of content stored in the buffer or other storage of the user device (or reproduction device) as a function of remaining time for playback (or reproduction) of that content to determine and set the bit rate of the remaining data to be transferred to scale the bit rate to a rate that ensures that the playback of the content on the user device does not outpace the transmission capabilities and buffering or storage capabilities of the client device. The recited technical solutions thereby avoid problems like unsteady or unstable playback qualities, pausing of playback to wait for more content, and delayed start of playback to wait for the entire content stream to be downloaded and prevent unnecessarily fluctuations in bit rate. Sprenger Decl. ¶ 56; Exhibit B at 17:15-63. The claims also recite how to reduce the amount of bit rate correction when the bit rate is within a predetermined correction amount reducing range, which improves the system and client device operation by not unnecessarily reducing the quality of the stream by allowing greater adaptability of the bit rate to changing or different technical

conditions (e.g., when the user's bandwidth increases or decreases during the transmission). Exhibit B at 18:5-34.

49. The claimed solutions recite more than just an abstract idea. Instead, the claims recite specific processes to determine code rate as a function of the remaining reproduction time at the client device and a preset value that are used to approximate and maintain the desired reproduction time to ensure that playback does not exceed the system's ability to transmit the remaining content data stream and also does not overly reduce the bit rate to unnecessarily degrade quality and do not merely recite results. Exhibit B at 29:33-36:59.

50. As explained in reference to the '101 Patent, the claims are not directed to longstanding human activity because the claims recite calculating and changing the bit rate according to a variety of specific technical parameters. *Supra* ¶ 24. The bit rate is a technical concept as it is the density of bits relative to a period of time, which is directly proportional to the resolution of the content. Indeed, the bit rate is distinctly different from a speed at which a byte of data can be transmitted across a network. Indeed, the '809 patent specification is clear regarding the distinction, which states "[a] reception rate that is a size of content data received by the client device 20 per unit time at a certain time  $t$  seconds is represented by  $V(t)$  bps. A bit rate of content data that the client device 20 is receiving at the time  $t$  is represented by  $b(t)$  bps." Exhibit B at 9:7-11. By taking the inverse of the bit rate  $b(t)$ , a media density can be found, which "represents a period of time during which the content can be reproduced based on the data of a unit size in the content data that the client device 20 is receiving at the time  $t$ ." Exhibit B at 9:16-19. Thus, in addition to humans not changing network and device operation and performance during streaming of digital content over a network, humans also do not change the bit rates of their own speech because to do so would require degrading or improving the quality of their speech, which is



nonsensical. The lack of connection to longstanding human activity is further illustrated by claims that recite the technical operation reducing a bit rate change if the change is within a particular range, determining a reception rate, applying further specific rules to select bit rates such as determinations of how fast the client device is reproducing the content, and the like.

51. For example, Claim 1 of the '809 Patent recites a non-abstract system for distributing content data including a transmission device and a reception device that solves the technical problems of Paragraphs 43-47, among others. It does so by reciting the process of determining the bit rate for a particular client device using operational characteristics of the device—and the playback time for reproducing the stored (or buffered) content and a set target value. Exhibit B at 29:49-56. The claim further recites using the determined rate to change the technical operation of the network and the performance of the client device by adjusting the bit rate of the content data to the determined rate so that the content can be transmitted to the client device fast enough to avoid a pause in playback (e.g., due to buffering) but not so fast as to change the bit rate to an extremely high (e.g., unsustainable) level that will need to be rapidly shifted downward. *Id.* at 29:57-62; Sprenger Decl. ¶ 61. Further still, Claim 1 also recites further adjusting the bit rate based upon a determined correction amount, which depends upon both the remaining reproduction time for the content and a pre-set target value and then reducing the magnitude of the correction amount if it is determined to be within a reducing range (e.g., if it is too high). Exhibit B at 29:55-56. Thus, Claim 1 recites more than merely results and more than simply sending and receiving data. It instead recites both how the bit rate is determined through the recited specific rules and how the operation of the network and performance of the client device is changed as a result of the recited method to improve the operation of the user device (e.g., less quality fluctuations, delay, pausing) and improve the user experience while simultaneously ensuring that

the correction to the bit rate is not constantly over correcting itself. Sprenger Decl. ¶ 55. Thus, at least Claim 1 is not directed to an abstract idea and is inventive.

52. Claim 1 also recites the specific technical environment that makes express that the claimed invention solves a technical problem. For example, Claim 1 recites a “delivery system” that ties the invention to a particular network environment that has many unknowns (e.g., quality of network, bandwidth constraints, telecommunication infrastructure, internet service provider quality, etc.). Exhibit B at 5:8-12; Sprenger Decl. ¶ 56. Claim 1 also recites that the content data includes pieces “of content [that] encoded an arbitrary one of a plurality of different bit rates” meaning that the correct bit rate needs to be identified and implemented to avoid poor performance at the client device. Exhibit B at 29:35-38; Sprenger Decl. ¶ 56.

53. The remaining claim language provides a technical solution that explains how to use the remaining reproduction time, pre-set target value, and the reducing range to set the best bit rate to efficiently manage the available buffer of the client device without excessive or extreme shifting, which solves the technical problems associated with providing streaming content data to devices over a network with varying networking conditions. The claim recites various elements that explain that a “remaining reproduction time” is used (and explains exactly what a “remaining reproduction time” means), how a bit rate is calculated based on the information—via approximating the remaining reproduction time to a target value—and calculating a smaller change in bit rates when the bit rate is within a predetermined correction amount reducing range. In other words, the system and method allow for a more consistent bit rate (e.g., quality level) to be streamed while simultaneously ensuring that the buffer maintains a satisfactory amount of reproduction time so as to avoid buffering events or delays. Exhibit B at 29:49-56; Sprenger Decl. ¶ 56-59. As a result, the recited bit rate changing unit that “calculate[s], according to a

predetermined correction amount calculation procedure, a correction amount for correcting the bit rate of the content data transmitted by the server device based on the acquired remaining reproduction time and a preset target value so as to approximate the remaining reproduction time to the target value, and changing the bit rate based on the calculated correction amount” allows the controlling device of the delivery system to determine whether the remaining reproduction time is sufficient relative to a target value. Exhibit B at 29:49-56; Sprenger Decl. ¶¶ 60-61. And the additional operation “to calculate, when the bit rate is within a predetermined correction amount reducing range, a correction amount having a smaller magnitude than a magnitude of the correction amount calculated according to the correction amount calculation procedure” changes the bit rate by a smaller amount to ensure that the buffer does not fall too low even though a larger change (e.g., and higher buffer rate) could be selected for the subsequent section. Exhibit B at 29:57-62; Sprenger Decl. ¶ 61. The result is less shifting in quality levels generally, less extreme shifting, and more stable management of the buffer all of which are solutions to the technical problem of providing streaming data over varying network conditions. *Id.*

54. The patent specification confirms that the claimed invention in Claim 1 is a technical solution to a technical problem. In particular, an example technical improvement is highlighted in column 17, line 49 – column 18, line 50 of the specification:

Attention is first focused on a number of times the bit rate is changed (number of bit rate changes). The number of bit rate changes is 12 times when using the delivery system 1, whereas the number of bit rate changes is 311 times when using the delivery system described in Patent Document 1. *This means that the number of bit rate changes is much Smaller when using the delivery system 1 than when using the delivery system described in Patent Document 1.*

Thus, the number of times that the bit rate is changed can be decreased significantly by using the delivery system 1 in comparison when the delivery system described in Patent Document 1 is used. *As a result, the use of the delivery system 1 improves the user's quality of experience in comparison with when the delivery system described in Patent Document 1 is used.*

*Next, attention is focused on an average bit rate that is an average value of bit rates of delivered content data. The average bit rate is 838.1 kbps when using the delivery system 1, whereas the average bit rate is 836.3 kbps when using the delivery system described in Patent Document 1. This means that the average bit rate when using the delivery system 1 is substantially equal to the average bit rate when using the delivery system described in Patent Document 1.*

Thus, the use of the delivery system 1 makes it possible to deliver content data having a relatively high bit rate in the same manner as when the delivery system described in Patent Document 1 is used, even though the number of bit rate changes is small.

*Next, attention is focused on remaining reproduction time. The remaining reproduction time fluctuates relatively significantly when using the delivery system 1. However, the remaining reproduction time will not become excessively short. Therefore, unintended interruption of reproduction of the content is avoided effectively.*

55. As a result of the recited altered technical operation of the streaming system using the recited method, a user device is able to play (or reproduce) the content with little to no jitter or pausing and without overly reducing the quality of the stream. Sprenger Decl. ¶ 58-59; Exhibit B at 1:42-47. Thus, the solution to the technical problems is found in the language of at least Claim 1.

56. The inventiveness of these technical solutions recited by the claims of the '809 Patent is evidenced by what a provider of the underlying accused functionality has said about the accused functionality. Even years after the invention date, JW Player CEO, Dave Otten, highlighted the significance of the infringing, claimed process that prioritizes video start time: "Video start speed is of the utmost importance to our customers, especially when their users are watching video on mobile devices. Every second of delayed start or buffering can cost them millions of dollars of lost revenue." Exhibit H at 2. The same article also notes the importance of maintaining the highest resolution (which is proportional to bit rate), further evidencing that the claimed adaptive bit rate process that balances reducing delayed video start time and quality is inventive. *Id.* at 1.

57. Claim 1 of the '809 Patent also recites an inventive concept for a system for distributing content data including a server and a client device, among other components that facilitate the innovative solution to the technical problems.

58. The specific elements of Claim 1 of the '809 Patent were an unconventional arrangement of elements compared to prior art content delivery systems. As also discussed above, at the time of the invention, other methods attempted to solve the problem differently. For example, Claim 1 of the '809 Patent was able to unconventionally change the bit rate of the content data to be transmitted to the client device as opposed to, for example, preventing playback until all content data is received or causing a pause in playback while additional data is received and prepared for playback. Claim 1 is similarly inventive over prior methods that reduced the quality of the entire content stream. Exhibit B 17:49-18:50; Sprenger Decl. ¶ 61. Further, even the solutions recited in Claim 1 of the '809 Patent and Claim 11 of the '101 Patent are inventive compared to each other. For example, while Claim 11 of the '101 Patent recites a solution that uses reproduction start time to calculate the bit rate optimal for loading the buffer, Claim 1 of the '809 Patent instead uses the preset target value and the reducing range to manage the buffer and reduce excess shifting during reproduction by the client device. Sprenger Decl. ¶¶ 42 & 61.

59. At least the preset target value and reducing range limitations are unconventional and inventive because adjusting the bit rate based on an approximation of the remaining reproduction time to the present target value and reducing the amount of change of the bit rate adjustment when the bit rate is within a predetermined correction amount reducing range were not well understood or routine at the time of the invention. Sprenger Decl. ¶ 67.

60. The ordered combination of the limitations of Claim 1 are unconventional and inventive because using the remaining reproduction time and the pre-set target value to calculate

a correction amount to the bit rate and using the calculated correction amount to change the operation of the server device such that the client device is able to be more efficiently managed was not well understood or routine at the time of the invention. Sprenger Decl. ¶ 67. Further, the adjustment of the correction amount when it is within a reducing range was also not well understood or routine at the time of the invention. *Id.* Thus, at least Claim 1 is inventive and patent-eligible under Section 101.

61. By way of further example of the subject matter eligibility of the '809 patent claims, claims 2, 8, and 13 are also non-abstract and recite inventive concepts.

62. Claim 2 recites a technical solution to a technical problem that is not abstract. Claim 2 adds to the system of Claim 1: “acquiring a reception rate that is an amount of the content data received by the client device from the server device per unit time” and using the reception rate in the calculation of the bit rate change. By adding the operational characteristic of a “reception rate” to the determination, the system can determine the best bit rate that can be downloaded within a time that does not risk the buffer falling to an undesirably low level due to each client device’s particular capabilities to receive data—a technical problem. Sprenger Decl. ¶ 70.

63. Further, dependent Claim 2 also recites an additional inventive solution to a technical problem. Claim 2 recites the additional step of acquiring a reception rate that is an amount of the content data received by the client device from the server device per unit time and determining the correction amount reducing range with the acquired reception rate, which was not routine or well understood in the field at the time of the invention. Sprenger Decl. ¶ 70. Claim 2 adds a requirement that the reception rate—a technical characteristic of the client devices—be

factored into the code rate, further refining the adjustment. Thus, at least Claim 2 is not directed to an abstract idea and is inventive.

64. Claim 8 recites a technical solution to a technical problem that is not abstract. Claim 8 adds to the system of Claim 1: “acquiring a reproduction speed at which the content is reproduced by the client device” and using the reproduction speed in the calculation of the bit rate change. By adding the operational characteristics of “reproduction speed” to the determination, the system can determine the best bit rate to accommodate altered operation of the client device which may mean that the buffer is emptying faster than typical playback—solving a technical problem. Sprenger Decl. ¶ 71.

65. Further, dependent Claim 8 also recites an additional inventive solution to a technical problem. Claim 8 recites the additional step of a reproduction speed at which the content is reproduced by the client device and determining the correction amount reducing range with the acquired reproduction speed, which was not routine or well understood in the field at the time of the invention. Sprenger Decl. ¶ 71. Claim 8 adds a requirement that the reproduction speed rate—a technical characteristic of the client devices—be factored into the code rate, further refining the adjustment. Thus, at least Claim 8 is not directed to an abstract idea and is inventive.

66. Dependent Claim 13 adds to the non-abstract ideas of independent claim 1 by specifying that “the correction amount [is set] to zero when a bit rate of content data being transmitted by the server device is within the correction amount reducing range.” This limitation specifies, in addition to the inventive ordered combination of Claim 1, that the correction amount is moved to zero (e.g., there is no need to change the bit rate) when the bit rate of the current content data is within the correction amount reducing range. This solves a further aspect of the technical problems in the world of adaptive bit rate streaming related to how selecting an optimal

bit rate can be done to avoid over-correction. Sprenger Decl. ¶ 72. For example, the claim makes clear that the correction amount is set to zero when the content data is within the reducing range, which the independent claim explains how to calculate through specifically recited rules. Thus, at least Claim 13 is not directed to an abstract idea and is inventive.

### **The '427 Patent**

67. On September 19, 2017, the USPTO duly and legally issued the '427 Patent, entitled "CONTENT DELIVERY SYSTEM" after a full and fair examination. The '427 Patent is attached hereto as Exhibit C and incorporated herein as if fully rewritten.

68. Claim 1 of the '427 Patent states:

“1. A content delivery system comprising an application server system and one or more connection control servers,  
     the one or more connection control servers being configured to receive equipment specification information transmitted by a user equipment and establish a connection between the application server system and the user equipment based on the received equipment specification information,  
     the application server system comprising:  
         a memory for storing sub content data representing sub content and main content data representing main content;  
         a first receiver for receiving a content delivery request transmitted by the user equipment and containing main content identification information for identifying the main content;  
         a processor for selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content; and  
         a first transmitter for transmitting selected sub content specification information for specifying the selected sub content data via the one or more connection control servers to the user equipment which has transmitted the content delivery request, wherein the first transmitter is configured to, at a same time that the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection, transmit the play-list information via the one or more connection control servers to the user equipment which has transmitted the content delivery request, the play-list information being information containing the main content identification information contained in the content delivery request and the selected sub content specification information, and the play-list information being information containing information indicating a sequence in which the main content identified by the main content



identification information and the sub content specified by the selected sub content specification information are output, wherein the user equipment comprises a second receiver for receiving main content data and sub content data transmitted by the application server system and output, based on the received main content data and sub content data, viewing content in which sub content represented by the sub content data is inserted in main content represented by the main content data.” See Exhibit C at 36:56-37:37.

69. At the time of the inventions, a number of technical problems existed in streaming Internet networks. For example, it was not possible to customize content for a user, including to inject user or class specific sub content alongside main content in a dynamic streaming environment. Exhibit C at 1:48-52; Sprenger Decl. ¶ 63. The specification confirms the technical problems particular to the Internet solved by the claimed inventions. Exhibit C at 1:40-47.

70. At the time of the inventions, other methods did not exist which would address the problem of “produc[ing] user-selected content in the same display as other content.” Sprenger Decl. ¶ 77, as described in the ’427 Patent. Rather, technology of the time was limited by requiring specific designed hardware, as in the case of picture-in-picture functionality, or being unable to send specific content to a particular user, as in the case of early IPTV systems. *Id.* These other solutions had their own technical problems, such as requiring specific hardware, or multiple redundant pieces of hardware in order to send content from different sources, and even then lacked the core functionality as the invention recited in the ’427 Patent, in particular, the ability to provide personalized content in response to a user request. *Id.*

71. The inventions claimed in the ’427 Patent are new, inventive solutions that allow retrieval of main and sub-content related to a user’s selection, and output of that content to the end user according to a desired sequence or configuration without the need to separately assemble or manipulate the content at the server. Sprenger Decl. ¶ 66. The claimed inventions do so though

specific processes that are recited in the claims and do not merely recite results. Sprenger Decl. ¶ 67.

72. The claimed solutions are rooted in technology and solve problems unique to the Internet and are not directed to abstract concepts like longstanding human or economic activity. *Id.* ¶ 66. The inventions control content display, use technical attributes to identify and select content, control bandwidth to affect the transmission and display of data, and use technical attributes to render the content in a particular sequence. The recited technical solutions thereby allow the simultaneous transmission and display of multiple types or sources of content. *Id.* ¶¶ 68-69; Exhibit C at 1:48-2:11. Indeed, as confirmed by expert testimony, “the recited process for guaranteeing a communication bandwidth ensures that both the main content and sub-content—both of which are dynamic as they are streamed over a network and as they encompass changing data (*e.g.*, video, audio, changing playlist-type information)—are rendered to the user device at the appropriate time, in the appropriate order, and commensurate with the bandwidth of the user-device.” Sprenger Decl. ¶ 67.

73. For example, Claim 1 of the ’427 Patent recites a non-abstract system for distributing data including an application server system and one or more connection control servers that solves the technical problems of Paragraphs 70-71, among others. It does so by reciting a connection control server that manages bandwidth for transmission of certain main content and sub-content and transmitting information that indicates how the user-requested content and sub-content is to be output. Exhibit C at 37:9-30. Thus, at least Claim 1 recites more than the results of an abstract idea and more than simply generic operations or conventional activities. Sprenger Decl. ¶¶ 66, 77.

74. As a result of the recited invention, a user device is able to output main and sub content simultaneously and in a desired, specified configuration and the network is able to transmit the specified main and sub content. *Id.* ¶ 76; Exhibit C at 37:31-37. Further still, the requirement that the play-list is transmitted at the time that connection is made between the components of the content delivery system means that fewer messages are sent over the network, solving the additional technical problem of network congestion. *Id.* at 19:16-22; Sprenger Decl. ¶ 77. Thus, the solution to the technical problems is found in the language of Claim 1.

75. Claim 1 of the '427 Patent provides an inventive concept for a system for distributing selected content and sub-content that was not well-understood, routine, or conventional activity, either individually or in combination at the time of the invention. Rather, the claim recites a system of components in a specific configuration and capable of operating according to recited rules in order to solve the technical problems described in Paragraphs 65-66, above. Exhibit C at 37:5-30; Sprenger Decl. ¶ 73.

76. Even years after the time of the invention, Peloton touts its infringing ability of providing music sub-content with the workout main content as a unique and important feature, which is evidence that the recited invention was inventive at the time of the invention. *See* Exhibit I; Exhibit Z; *see also* Sprenger Decl. ¶ 72.

77. The specific limitations of Claim 1 of the '427 Patent are an unconventional arrangement of elements compared to prior art content delivery systems. As also discussed above, at the time of the invention, other methods attempted to solve the problem differently. For example, Claim 1 of the '427 Patent was able to unconventionally cause a user to view the user's desired content and/or sub-content selected by the user. Previous technologies, such as picture-in-picture functionality which existed, were unable to provide main *and* sub-content which were customized

for the user. Rather, “[s]uch technology was limited to displaying another available broadcast channel as PIP information and did not include any content specific to the user’s currently viewed program or any other personalized information” and moreover was provided in a different technical manner. *See* Sprenger Decl. ¶ 77 (Picture-in-picture features “required hardware specifically designed to offer the PIP functionality, including a separate dedicated tuner for the analog broadcast systems in use at the time. The dedicated tuner could tune onto a different channel, demodulate it and enhanced TV driver circuitry would render the PIP image on the TV’s screen”). Further, it was not until years after the invention date of the ’427 Patent that a form of personalized content transmission was standardized, evidencing the inventiveness of NEC’s solutions years earlier. *Id.* ¶¶ 77, 80.

78. At least the “selecting the stored sub content data based on selection information containing attribute information representing an attribute of the sub content”; “at a same time that the one or more connection control servers executes a process for guaranteeing a communication bandwidth required for transmitting content data as a process for establishing the connection”; “play-list information being information containing information indicating a sequence in which the main content identified by the main content identification information and the sub content specified by the selected sub content specification information are output” limitations are unconventional and inventive because they were not well understood or routine at the time of the invention. Sprenger Decl. ¶¶ 73-75.

79. For example, during the prosecution of the patent and as confirmed in the specification, guaranteeing a communication bandwidth “at a same time” that the system transmits play-list information was not known in the art. *See* Exhibit J at 8.

80. The ordered combination of the limitations of Claim 1 are also unconventional and inventive. Sprenger Decl. ¶ 76; Exhibit J at 8, 23-25. The combination of the elements allows the inventive simultaneous transmission and display of the multiple types of content. Sprenger Decl. ¶¶ 75-77. The play-list that provides the transmission and display sequencing is assembled from the user-specified content and managing bandwidth at the same time as transmitting the play-list ensures that the specified content can be presented at the same time and in the right way at the user device. *Id.* Thus, at least Claim 1 is inventive and patent-eligible under Section 101.

81. By way of further example of the subject matter eligibility of the '427 patent claims, claims 4 and 5 are also non-abstract and recite inventive concepts.

82. Claim 4 recites a technical solution to a technical problem that is not abstract. Claim 4 adds to the system of Claim 1: “the processor is configured to select sub content data . . . associated with the user identification information for identifying the user of the user equipment which has transmitted the content delivery request.” By adding the requirement of using user identification information to select the sub content to be rendered, the system can tailor the multi-source transmission to the user and user’s device—allowing the user to view user-related content with the main content. Sprenger Decl. ¶¶ 87, 91; '427 Patent at 1:44-47.

83. Further, dependent Claim 4 also recites an additional inventive solution to a technical problem. Claim 4 recites “the processor is configured to select sub content data . . . associated with the user identification information for identifying the user of the user equipment which has transmitted the content delivery request,” which was not routine or well understood in the field at the time of the invention. Sprenger Decl. ¶¶ 87, 91-92. Thus, at least Claim 4 is not directed to an abstract idea and is inventive.

84. Claim 5 recites a technical solution to a technical problem that is not abstract. Claim 5 adds to the system of Claim 1: “the processor is configured to select sub content . . . associated with the main content identification information contained in the received content delivery request.” By adding the requirement of using main content identification information to select the sub content to be rendered, the system can tailor the multi-source transmission to the include sub content that corresponds to the main content—allowing the system to supplement main content with additional related content. *Id.*

85. Further, dependent Claim 5 also recites an additional inventive solution to a technical problem. Claim 5 recites “the processor is configured to select sub content . . . associated with the main content identification information contained in the received content delivery request,” which was not routine or well understood in the field at the time of the invention. *Id.* Thus, at least Claim 5 is not directed to an abstract idea and is inventive.

#### **Count I: Infringement of the '101 Patent**

86. Plaintiff realleges and incorporates by reference all of the allegations set forth in the preceding paragraphs.

87. On information and belief, Defendant directly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 2, 4, 5, 11, 12, 14–16, 18, 20–23, 25, and 26 of the '101 Patent in violation of 35 U.S.C. § 271(a).

88. On information and belief, Defendant makes, has made, offers to sell, sells and/or uses the Accused Products.

89. On information and belief, the Accused Products use the content distribution methods and systems claimed in the '101 Patent. The Accused Products include servers configured to communicate with a reception device as described in and claimed by the '101 Patent. *See* Exhibit D. Thus, Defendant's Accused Products infringe the '101 Patent.

90. For example, use of the Accused Products includes running the Peloton Web Application. A Peloton server sends content data to the Peloton Web Application, and the code rate is changed during the transmission described in and claimed by the '101 Patent. Thus, on information and belief, Defendant directly infringes the claimed method for content distribution as described in the '101 Patent by making, having made, offering to sell, selling and/or using the Accused Products including the claimed communication between a server and reception device. In particular, Defendant infringes the '101 Patent at least when its instructors teach classes on the Accused Products, its employees demonstrate the Accused Products in its showrooms, and/or its employees conduct testing on the Accused Products. Defendant further infringes the '101 Patent by training its customers on the use of the Accused Products and/or promotion and/or sales of the Accused Products to Peloton's customers including, but not limited to, end-users, subscribers, and digital connected device platforms for implementing the content distribution method as claimed in the '101 Patent. A non-limiting and exemplary claim chart comparing Accused Products to Claims 1, 2, 4, 5, 11, 12, 14–16, 18, 20–23, 25, and 26 of the '101 Patent is attached hereto as Exhibit D.

91. On information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '101 Patent by directing and controlling its customers' infringing conduct. For example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '101 Patent at least when Defendant's customers use the Accused Products such as the "Peloton App," "Peloton Bikes" and "Peloton Treads" to stream media in an infringing manner as set forth in Exhibit D. For example, the Peloton Web App is configured to download javascript code that executes in an infringing manner. *See* Exhibit D. While the Defendant's customers use the Accused Products, Defendant controls the system as a whole and conditions receipt of benefit from the system on customer's

infringing activity. For example, Defendant conditions the provision of its services on the customer agreeing to its Terms of Service, which state that “[t]hese Terms are between you and Peloton, and not with the App Provider, and Peloton (not the App Provider), is solely responsible for the App.” Exhibit K (Peloton Terms of Service) at 7. Defendant’s Terms of Service further provide that Defendant is solely responsible for the investigation, defense, settlement and discharge of any third party claim that the App or the customer’s use of the App infringes intellectual property rights:

- In the event of any third party claim that the App or your possession and use of that App infringes that third party’s intellectual property rights, Peloton will be solely responsible for the investigation, defense, settlement and discharge of any such intellectual property infringement claim to the extent required by these Terms.

Exhibit K (Peloton Terms of Service) at 8.

92. Further, Defendant directs its customers to use the infringing system by requiring the customer to use software that communicates with a server in an infringing manner. For example, Defendant’s Terms of Service include an express prohibition on modifying or using the App in any other manner:

**Rights in App Granted.** Subject to your compliance with these Terms, Peloton grants to you a limited non-exclusive, non-transferable, revocable license, with no right to sublicense, to download and install a copy of the App on a mobile device or computer that you own or control and to run such copy of the App solely for your own personal non-commercial purposes. You may not copy the App, except for making a reasonable number of copies for backup or archival purposes. Except as expressly permitted in these Terms, you may not:

1. copy, modify or create derivative works based on the App;
2. distribute, transfer, sublicense, lease, lend or rent the App to any third party;
3. reverse engineer, decompile or disassemble the App; or
4. make the functionality of the App available to multiple users through any means.

Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the “Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not



expressly permitted by Peloton in writing.”); 12 (“Downloading and/or installing any third party software and/or applications that are not expressly authorized by Peloton on any Peloton hardware constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton.”).

93. On information and belief, Defendant tethers and conditions the customer’s benefit to using the system, by requiring the customer to pay a subscription for the use of the Accused Products. Exhibit K (Peloton Terms of Service) at 1 (“you must register as a member of the Peloton Service and enter into a subscription agreement for access to our live and on-demand classes, Content and features (a ‘Subscription’)”). Defendant establishes the manner of customers’ infringement, e.g., Defendant does not allow customers to use any third-party software and/or applications that are not directly authorized by Peloton on any Peloton hardware. *Id.* at 7, 9, 12.

94. On information and belief, Defendant maintains control over the use of the Accused Products. For example, Defendant maintains and controls access to content streamed to end user devices. Defendant enables and disables functions that can be performed by the Accused Products in accordance with subscription plans. In addition, Defendant provides software to the Accused Products.

95. As another example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘101 Patent by directing and controlling one or more third party’s infringing conduct. For example, Claim 16 of the ‘101 Patent is directed to a transmission device. *See* Exhibit D. On information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘101 Patent at least when Defendant uploads content to and configures one or more third party servers to transmit contents to users in an infringing manner.

96. Defendant has known of the '101 Patent at a date prior to the filing of this Amended Complaint, and has known of the '101 Patent at least upon the filing of the Original Complaint, which was served on Defendant on July 28, 2022. Defendant has thus had actual knowledge of the '101 Patent for over three months prior to the filing of this Amended Complaint.

97. Prior to the filing of the Original Complaint, NEC put Defendant on notice of its infringement of the '101 patent at least in a letter dated July 26, 2022. The July 26, 2022 letter was sent to the attention of Hisao Kushi, Peloton's Co-Founder and then Chief Legal Officer. Exhibit L (Letter). The letter was delivered via FedEx Priority Overnight, direct signature required. Exhibit M (FedEx Label). Upon information and belief, the letter was received by Defendant on July 27, 2022, having been signed for by a representative of Defendant at 9:59 a.m. Exhibit N (FedEx Proof of Delivery).

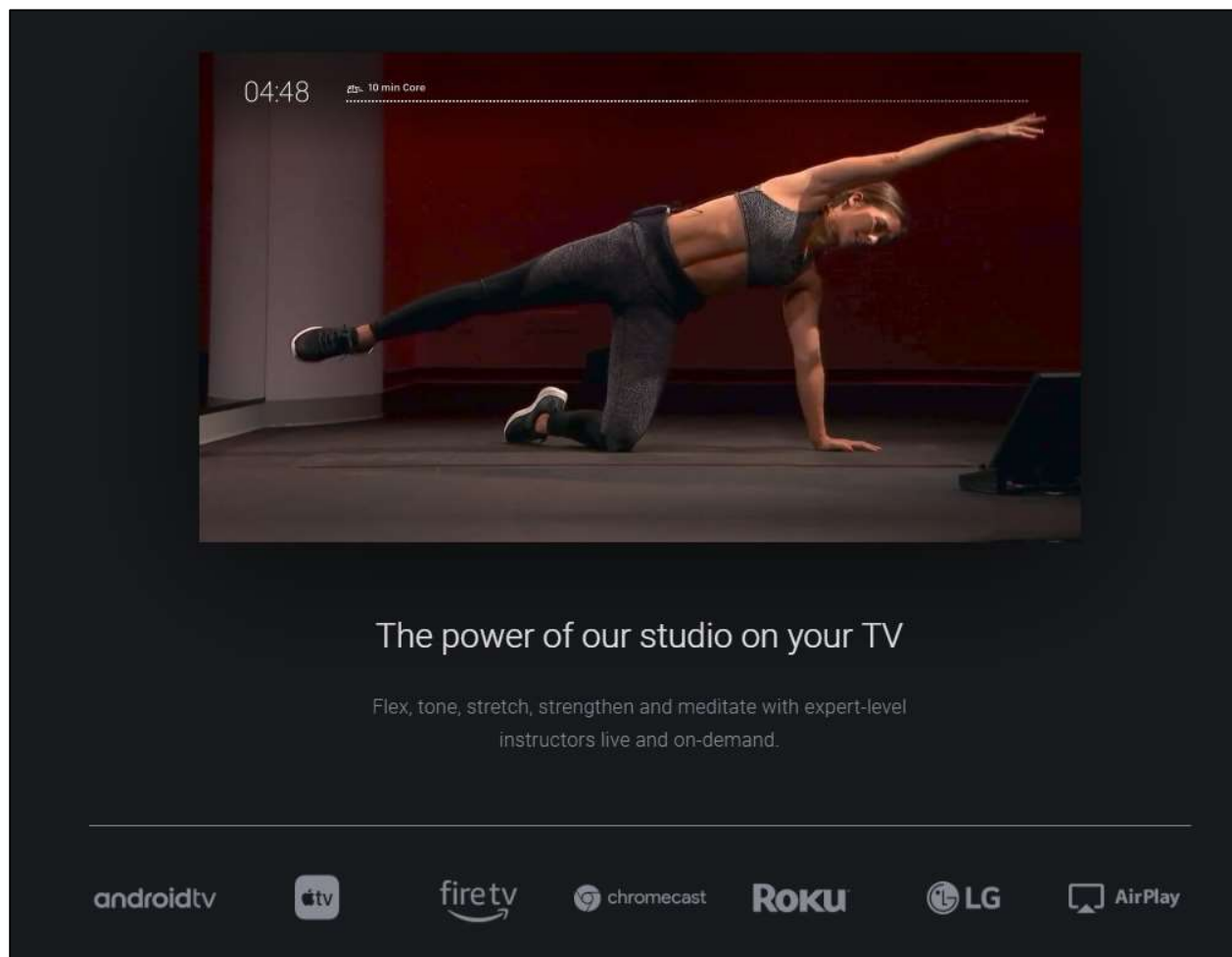
98. The July 26, 2022 letter included detailed claim charts explaining how Defendant infringed the '101 Patent. The July 26, 2022 letter expressly stated that that NEC "intends to enforce its patent rights." Exhibit L. Despite also stating that NEC would be willing "to discuss with Peloton the terms of an appropriate license," and inviting Defendant to "reach out to the undersigned with any questions, or if discussions of such a license would be of interest," *see* Exhibit L, Defendant has not done so in the more than three-month period following receipt of the letter.

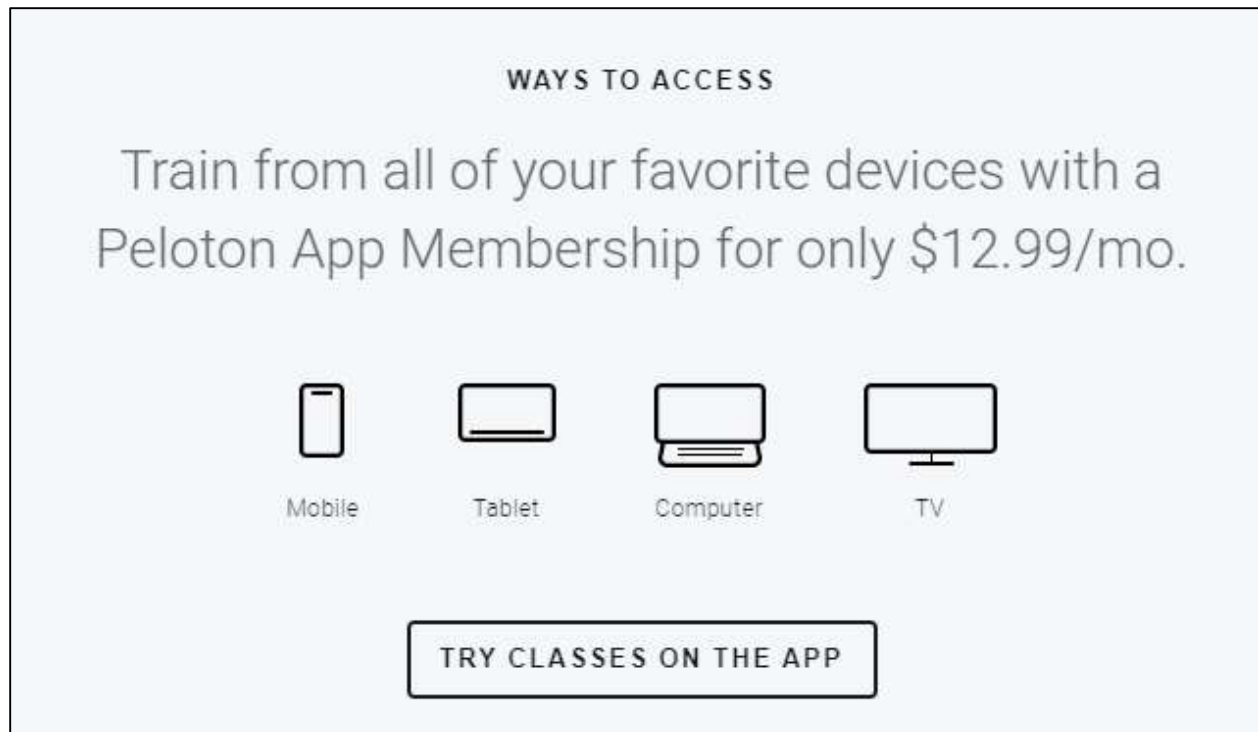
99. On information and belief, Defendant indirectly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 2, 4, 5, 11, 12, 14–16, 18, 20–23, 25, and 26 of the '101 Patent.

100. On information and belief, Defendant is liable for inducing infringement of the '101 Patent under 35 U.S.C. § 271(b) by having knowledge of the '101 Patent and knowingly causing

or intending to cause, and continuing to knowingly cause or intend to cause, direct infringement of the '101 Patent, with specific intent, by its customers.

101. Specifically, Defendant induces infringement of the '101 Patent by training, promotion, and/or sales of the Accused Products to Peloton customers for their use of the content distribution methods claimed in the '101 Patent. For example, Defendant promotes the Peloton App to customers for their use, in an infringing manner, on TVs and other mobile devices via their website, for example at Exhibit O (<https://onepeloton.com/app>):





102. As another example, Defendant promotes its Bike and Tread products via its website, and highlights the infringing features, for example at <https://www.onepeloton.com/bikes> and <https://www.onepeloton.com/tread>.



103. Further, Peloton induces customers and prospective customers to infringe by inviting them to try Peloton Bike and Tread devices at local Peloton showrooms:

**TRY THE TREAD**

Try it for yourself at a  
local showroom

- Book a 30 minute personalized walkthrough
- Take a 10 minute warm-up class to feel the Tread for yourself
- Ask a Peloton expert questions about classes, membership and more

**FIND A SHOWROOM**

<https://www.onepeloton.com/tread>.

## BOOK AN APPOINTMENT

Get a personalized walkthrough of the Peloton Bike, Bike+, Tread, or Guide and take a 10-minute warm-up class to experience it for yourself.

Just looking to browse, get advice or shop apparel? [Visit your local showroom](#)

At Peloton, ensuring the safety of our team and visitors is our number one priority. Before your appointment, a team member will reach out with details about what to bring and expect during your visit.

Here's where you can try Peloton Row in limited Showrooms in the US now:

1. Paramus, NJ
2. Santa Monica, CA
3. Tysons Corner, VA
4. Dallas, TX
5. Troy, MI
6. Austin, TX
7. Dedham, MA
8. Skokie, IL
9. Charlotte, NC
10. Highland Village, TX
11. Tampa, FL
12. Coral Gables, FL
13. San Diego, CA
14. Seattle, WA
15. Santa Clara, CA
16. Alpharetta, GA
17. North Scottsdale, AZ
18. Manhattan West, NY
19. Short Hills, NJ

Peloton Row will be available for test classes in all US Showroom locations later this year.

See Exhibit P (<https://booking.onepeloton.com/#!/choose-location>).

104. On information and belief, Peloton provides demonstrations and user manuals to Peloton customers, which encourage customers to use the Accused Products in an infringing manner. *See, e.g.,* Exhibit Q ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4799136165780/Peloton\\_Bike\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4799136165780/Peloton_Bike_Manual.pdf)); Exhibit R ([https://support.onepeloton.com/hc/en-us/article\\_attachments/360067930212/Peloton\\_Bike\\_\\_User\\_Manual\\_\\_North\\_America\\_.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/360067930212/Peloton_Bike__User_Manual__North_America_.pdf)); Exhibit S ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4406174535828/Peloton\\_Tread\\_Manual\\_NA.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4406174535828/Peloton_Tread_Manual_NA.pdf)); Exhibit T ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4401927651860/Peloton\\_Tread\\_Plus\\_User\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4401927651860/Peloton_Tread_Plus_User_Manual.pdf)). Additionally, for example, Defendant's website instructs customers to use the Peloton App on various devices, including iOS, iPad, Apple TV, Android mobile and TV, and Amazon Fire TV and Tablet:

Elevate your fitness routine with yoga, strength, stretching, and more with an immersive experience on the biggest screen in your home. With Peloton now available on Apple® TV, stream our full library of at-home fitness classes.

To enjoy our at-home fitness content on Apple® TV, you can sign in with your existing Peloton App or All-Access Membership. If you're new to Peloton, create an account at [members.onepeloton.com](https://members.onepeloton.com) or through your mobile device App and start a 30-day free trial.

Your Peloton Membership or free trial includes access to all of our Apps, just log in using your account information through [iOS, iPad, and Apple® TV](#); [Android® mobile and TV](#), [Amazon® Fire TV and Tablet](#), and our [Roku® channel](#).

#### HOW TO DOWNLOAD THE PELOTON APP FOR APPLE® TV:

1. Search for "Peloton" in the Apple® Store on your Apple® TV.
2. Select download and ensure your device is within system compatibility.

Exhibit U (<https://support.onepeloton.com/hc/en-us/articles/360045235932-Peloton-App-For-Apple-TV>).

105. Defendant's website contains detailed instructions for how to use the Peloton App on these devices, which results in direct infringement of the '101 Patent.

#### HOW TO USE PELOTON ALL ACCESS ON APPLE® TV

1. Once you open the Peloton App, you will see the following screen:



*Id.*; see also Exhibit V ([https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h\\_01G784JT081Y7DNNTEDQM9A3S7](https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h_01G784JT081Y7DNNTEDQM9A3S7)) (including instructions for “DOWNLOADING THE PELOTON APP FOR ANDROID® TV” and “STARTING A CLASS ON YOUR ANDROID® TV”).

106. Defendant’s customers for the Accused Products directly infringe the ’101 Patent by using the Accused Products as instructed by Defendant.

107. As alleged above, Defendant had knowledge of the ’101 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant’s infringement of the ’101 Patent at a date prior to the filing of the original Complaint. Despite knowing that its actions constitute induced infringement of the ’101 Patent and/or despite knowing that there was a high likelihood that its actions constitute induced infringement of the patent, Peloton nevertheless continues its infringing actions, and continues to make, use, sell, and/or offer for sale the Accused Products.

108. Peloton is liable for contributory infringement of the ’101 Patent under 35 U.S.C § 271(c) by having sold or offered to sell, and continuing to sell or offer for sale the Accused Products within the United States because the Accused Products constitute a material part of the invention embodied in the ’101 Patent, which Peloton knows to be especially made and/or especially adapted for use in infringement of the ’101 Patent, and which is not a staple article or commodity of commerce suitable for substantial non-infringing use.

109. Specifically, Peloton contributes to infringement of the ’101 Patent by, inter alia, promotion, and/or sales of the infringing Accused Products to Peloton’s customers for their use of



the content distribution method as claimed in the '101 Patent. Those customers directly infringe the '101 Patent by using the Accused Products.

110. For example, infringing Accused Products, such as the “Bike” and “Tread” products, are designed to run software that infringes the '101 Patent, and Defendant’s Terms of Service expressly prohibit the use of any other third-party software. Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the “Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not expressly permitted by Peloton in writing.”); 12 (“Downloading and/or installing any third party software and/or applications that are not expressly authorized by Peloton on any Peloton hardware constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton.”). Accordingly, the Accused Products have no substantial non-infringing uses.

111. By engaging in the conduct described herein, Defendant has injured NEC and is thus liable for infringement of the '101 Patent, pursuant to 35 U.S.C. § 271.

112. Defendant has committed these acts of infringement without license or authorization.

113. As a result of Defendant’s infringement of the '101 Patent, Plaintiff has been, and will continue to be, damaged and will suffer irreparable injury unless the infringement is enjoined by this Court pursuant to 35 U.S.C. § 283 and/or the equitable powers of this Court.

114. As a result of Defendant’s infringement of the '101 Patent, Plaintiff has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendant’s past infringement, together with interests and costs.

115. As alleged above, Defendant had knowledge of the '101 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant's infringement of the '101 Patent at a date prior to the filing of the Original Complaint. Despite such knowledge, Defendant has continued its infringing activities. Upon information and belief, Defendant's infringement of the '101 Patent is willful, entitling Plaintiff to enhanced damages pursuant to 35 U.S.C. § 284. This action is therefore exceptional within the meaning of 35 U.S.C. § 285, entitling Plaintiff to its attorneys' fees and expenses.

116. NEC is in compliance with 35 U.S.C. § 287 at least because there is no patented article that is required to be marked.

**Count II: Infringement of the '809 Patent**

117. Plaintiff realleges and incorporates by reference all of the allegations set forth in the preceding paragraphs.

118. On information and belief, Defendant directly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 2, 8, 13–15, 26, 27, 30, and 31 of the '809 Patent in violation of 35 U.S.C. § 271(a).

119. On information and belief, Defendant makes, has made, offers to sell, sells and/or uses the Accused Products.

120. On information and belief, the Accused Products use the content distribution method claimed in the '809 Patent. The Accused Products include servers that transmit content data, and client devices that receive content data, at an adjustable bit rate as described in and claimed by the '809 Patent. *See* Exhibit E. Thus, Defendant's Accused Products infringe the '809 Patent.

121. For example, use of the Accused Products includes connecting a client device, such as a laptop, tablet, cellphone, a Peloton Bike, or a Peloton Tread to a Peloton content delivery

server. The bit rate of the content data is changed according to the remaining reproduction time, as described in Claim 1 of the '809 Patent. Thus, on information and belief, Defendant directly infringes the claimed method for distributing content as described in the '809 Patent by making, having made, offering to sell, selling, and/or using the Accused Products including the claimed content distribution system. In particular, Defendant infringes the '809 Patent at least when its instructors teach classes on the Accused Products, its employees demonstrate the Accused Products in its showrooms, and/or its employees conduct testing on the Accused Products. Defendant further infringes the '809 Patent by training its customers on the use of the Accused Products and/or promotion and/or sales of the Accused Products to Peloton's customers including, but not limited to, end-users, subscribers, and digital connected device platforms for implementing the content delivery system as claimed in the '809 Patent. A non-limiting and exemplary claim chart comparing Accused Products to Claims 1, 2, 8, 13–15, 26, 27, 30, and 31 of the '809 Patent is attached hereto as Exhibit E.

122. On information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '809 Patent by directing and controlling its customers' infringing conduct. For example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '809 Patent at least when Defendant's customers use the Accused Products such as the "Peloton App," "Peloton Bikes" and "Peloton Treads" to stream media in an infringing manner as set forth in Exhibit E. For example, the Peloton Web App is configured to download javascript code that executes in an infringing manner. *See* Exhibit E. While the Defendant's customers use the Accused Products, Defendant controls the system as a whole and conditions receipt of benefit from the system on customer's infringing activity. For example, Defendant conditions the provision of its services on the

customer agreeing to its Terms of Service, which state that “[t]hese Terms are between you and Peloton, and not with the App Provider, and Peloton (not the App Provider), is solely responsible for the App.” Exhibit K (Peloton Terms of Service) at 7. Defendant’s Terms of Service further provide that Defendant is solely responsible for the investigation, defense, settlement and discharge of any third party claim that the App or the customer’s use of the App infringes intellectual property rights:

- In the event of any third party claim that the App or your possession and use of that App infringes that third party’s intellectual property rights, Peloton will be solely responsible for the investigation, defense, settlement and discharge of any such intellectual property infringement claim to the extent required by these Terms.

Exhibit K (Peloton Terms of Service) at 8.

123. Further, Defendant directs its customers to use the infringing system by requiring the customer to use software that communicates with a server in an infringing manner. For example, Defendant’s Terms of Service include an express prohibition on modifying or using the App in any other:

- Rights in App Granted.** Subject to your compliance with these Terms, Peloton grants to you a limited non-exclusive, non-transferable, revocable license, with no right to sublicense, to download and install a copy of the App on a mobile device or computer that you own or control and to run such copy of the App solely for your own personal non-commercial purposes. You may not copy the App, except for making a reasonable number of copies for backup or archival purposes. Except as expressly permitted in these Terms, you may not:
1. copy, modify or create derivative works based on the App;
  2. distribute, transfer, sublicense, lease, lend or rent the App to any third party;
  3. reverse engineer, decompile or disassemble the App; or
  4. make the functionality of the App available to multiple users through any means.

Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the “Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not expressly permitted by Peloton in writing.”); 12 (“Downloading and/or installing any third party

software and/or applications that are not expressly authorized by Peloton on any Peloton hardware constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton.”).

124. On information and belief, Defendant tethers and conditions the customer’s benefit to using the system, by requiring the customer to pay a subscription for the use of the Accused Products. Exhibit K (Peloton Terms of Service) at 1 (“you must register as a member of the Peloton Service and enter into a subscription agreement for access to our live and on-demand classes, Content and features (a ‘Subscription’)”). Defendant establishes the manner of customers’ infringement, e.g., Defendant does not allow customers to use any third-party software and/or applications that are not directly authorized by Peloton on any Peloton hardware. *Id.* at 7, 9, 12.

125. On information and belief, Defendant maintains control over the use of the Accused Products. For example, Defendant maintains and controls access to content streamed to end user devices. Defendant enables and disables functions that can be performed by the Accused Products in accordance with subscription plans. In addition, Defendant provides software to the Accused Products.

126. As another example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘809 Patent by directing and controlling one or more third party’s infringing conduct. For example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘809 Patent at least when Defendant uploads content to and configures one or more third party servers to transmit contents to user in an infringing manner.

127. Defendant has known of the ‘809 Patent at a date prior to the filing of this Amended Complaint, and has known of the ‘809 Patent at least upon the filing of the original Complaint

which was served on Defendant on July 28, 2022. Defendant has thus had actual knowledge of the '809 Patent for over three months prior to the filing of this Amended Complaint.

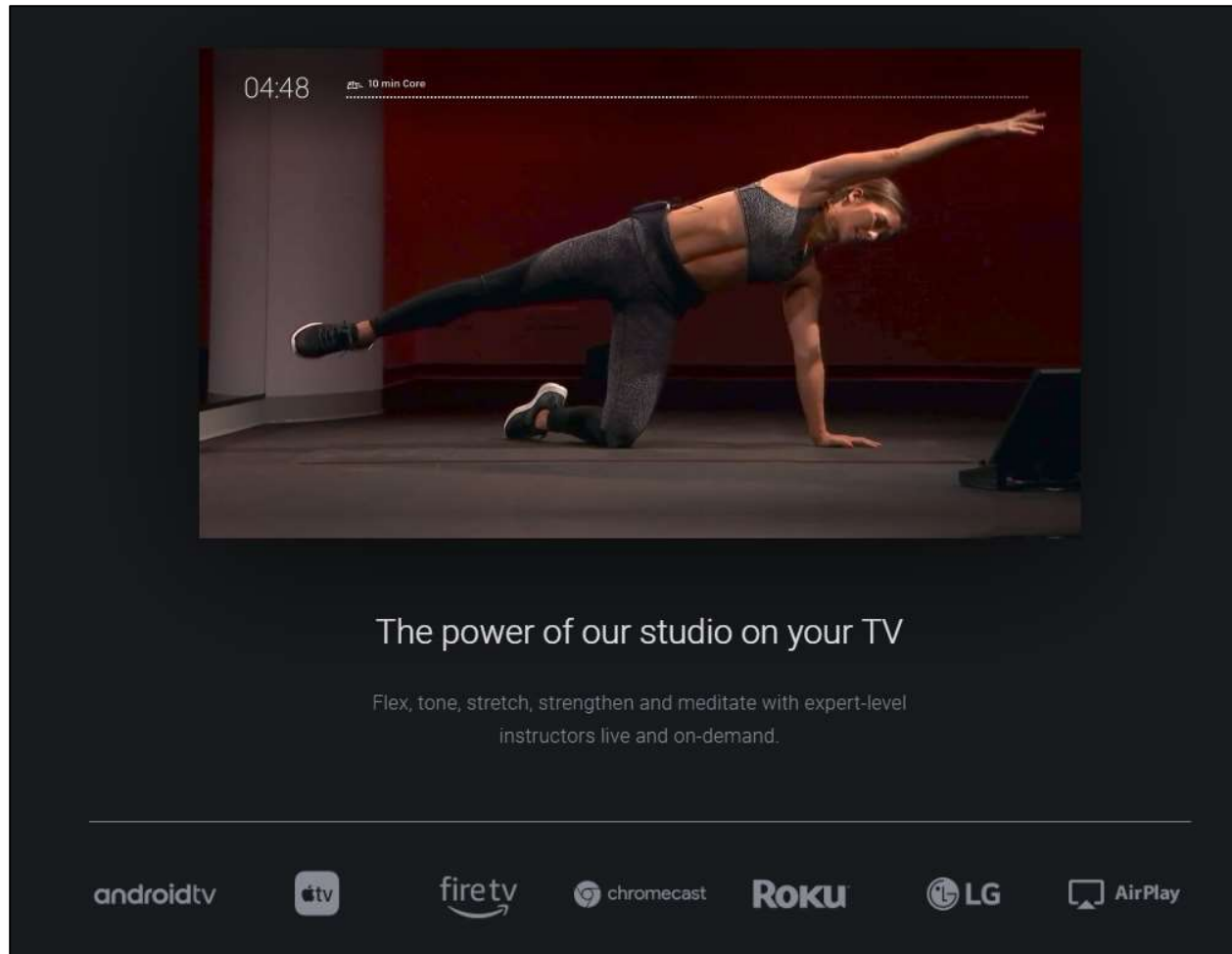
128. Prior to the filing of the Original Complaint, NEC put Defendant on notice of its infringement of the '809 patent at least in a letter dated July 26, 2022. The July 26, 2022 letter was sent to the attention of Hisao Kushi, Peloton's Co-Founder and then Chief Legal Officer. Exhibit L (Letter). The letter was delivered via FedEx Priority Overnight, direct signature required. Exhibit M (FedEx Label). Upon information and belief, the letter was received by Defendant on July 27, 2022, having been signed for by a representative of Defendant at 9:59 a.m. Exhibit N (FedEx Proof of Delivery).

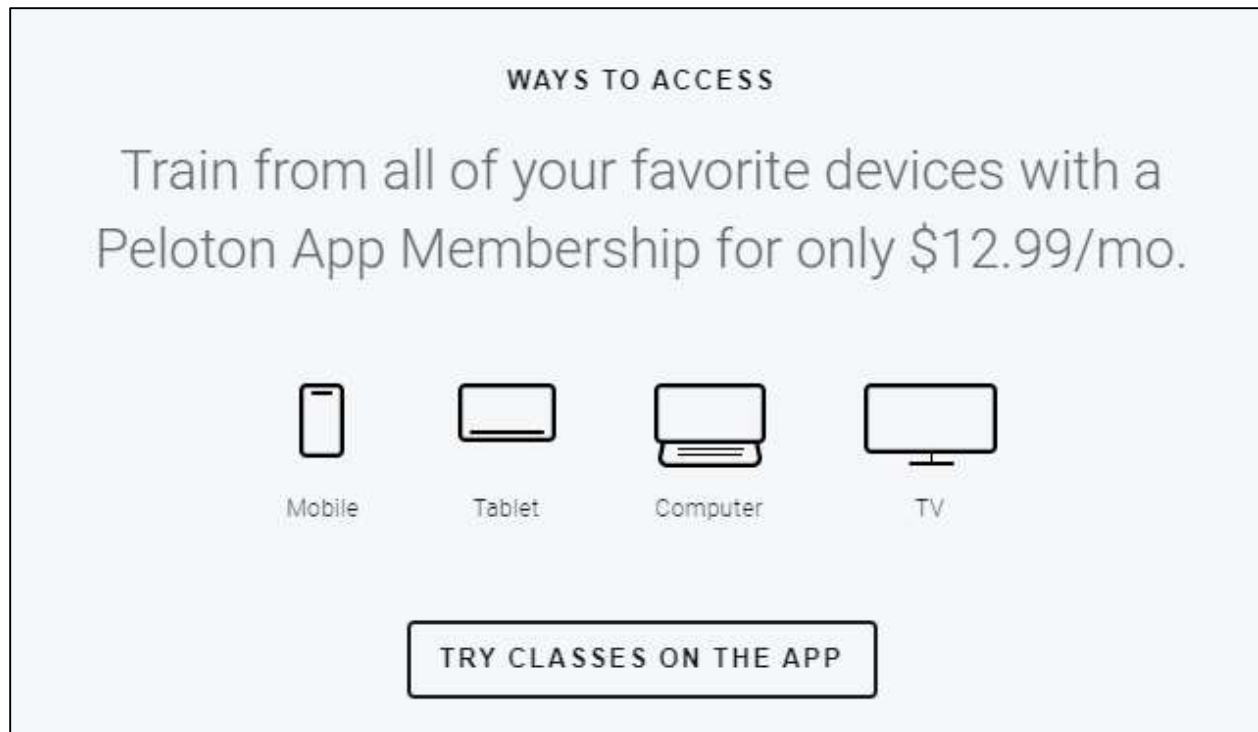
129. The July 26, 2022 letter included detailed claim charts explaining how Defendant infringed the '809 Patent. The July 26, 2022 letter expressly stated that that NEC "intends to enforce its patent rights." Exhibit L. Despite also stating that NEC would be willing "to discuss with Peloton the terms of an appropriate license," and inviting Defendant to "reach out to the undersigned with any questions, or if discussions of such a license would be of interest" (see Exhibit L), Defendant has not done so in the more than three-month period following receipt of the letter.

130. On information and belief, Defendant indirectly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 2, 8, 13–15, 26, 27, 30, and 31 of the '809 Patent.

131. On information and belief, Defendant is liable for inducing infringement of the '809 Patent under 35 U.S.C. § 271(b) by having knowledge of the '809 Patent and knowingly causing or intending to cause, and continuing to knowingly cause or intend to cause, direct infringement of the '809 Patent, with specific intent, by its customers.

132. Specifically, Defendant induces infringement of the '809 Patent by training, promotion, and/or sales of the Accused Products to Peloton customers for their use of the content delivery system as claimed in the '809 Patent. For example, Defendant promotes the Peloton App to customers for their use, in an infringing manner, on TVs and other mobile devices via their website, for example at Exhibit O (<https://onepeloton.com/app>):





133. As another example, Defendant promotes its Bike and Tread products via its website, and highlights the infringing features, for example at <https://www.onepeloton.com/bikes> and <https://www.onepeloton.com/tread>.



134. Further, Peloton induces customers and prospective customers to infringe by inviting them to try Peloton Bike and Tread devices at local Peloton showrooms:



**TRY THE TREAD**

Try it for yourself at a  
local showroom

- Book a 30 minute personalized walkthrough
- Take a 10 minute warm-up class to feel the Tread for yourself
- Ask a Peloton expert questions about classes, membership and more

**FIND A SHOWROOM**

<https://www.onepeloton.com/tread>.

## BOOK AN APPOINTMENT

Get a personalized walkthrough of the Peloton Bike, Bike+, Tread, or Guide and take a 10-minute warm-up class to experience it for yourself.

Just looking to browse, get advice or shop apparel? [Visit your local showroom](#)

At Peloton, ensuring the safety of our team and visitors is our number one priority. Before your appointment, a team member will reach out with details about what to bring and expect during your visit.

Here's where you can try Peloton Row in limited Showrooms in the US now:

1. Paramus, NJ
2. Santa Monica, CA
3. Tysons Corner, VA
4. Dallas, TX
5. Troy, MI
6. Austin, TX
7. Dedham, MA
8. Skokie, IL
9. Charlotte, NC
10. Highland Village, TX
11. Tampa, FL
12. Coral Gables, FL
13. San Diego, CA
14. Seattle, WA
15. Santa Clara, CA
16. Alpharetta, GA
17. North Scottsdale, AZ
18. Manhattan West, NY
19. Short Hills, NJ

Peloton Row will be available for test classes in all US Showroom locations later this year.

See Exhibit P (<https://booking.onepeloton.com/#!/choose-location>).

135. On information and belief, Peloton provides demonstrations and user manuals to Peloton customers, which encourage customers to use the Accused Products in an infringing manner. *See, e.g.,* Exhibit Q ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4799136165780/Peloton\\_Bike\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4799136165780/Peloton_Bike_Manual.pdf)); Exhibit R ([https://support.onepeloton.com/hc/en-us/article\\_attachments/360067930212/Peloton\\_Bike\\_\\_User\\_Manual\\_\\_North\\_America\\_.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/360067930212/Peloton_Bike__User_Manual__North_America_.pdf)); Exhibit S ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4406174535828/Peloton\\_Tread\\_Manual\\_NA.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4406174535828/Peloton_Tread_Manual_NA.pdf)); Exhibit T ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4401927651860/Peloton\\_Tread\\_Plus\\_User\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4401927651860/Peloton_Tread_Plus_User_Manual.pdf)). Additionally, for example, Defendant's website instructs customers to use the Peloton App on various devices, including iOS, iPad, Apple TV, Android mobile and TV, and Amazon Fire TV and Tablet:

Elevate your fitness routine with yoga, strength, stretching, and more with an immersive experience on the biggest screen in your home. With Peloton now available on Apple® TV, stream our full library of at-home fitness classes.

To enjoy our at-home fitness content on Apple® TV, you can sign in with your existing Peloton App or All-Access Membership. If you're new to Peloton, create an account at [members.onepeloton.com](https://members.onepeloton.com) or through your mobile device App and start a 30-day free trial.

Your Peloton Membership or free trial includes access to all of our Apps, just log in using your account information through [iOS, iPad, and Apple® TV](#); [Android® mobile and TV](#), [Amazon® Fire TV and Tablet](#), and our [Roku® channel](#).

#### HOW TO DOWNLOAD THE PELOTON APP FOR APPLE® TV:

1. Search for "Peloton" in the Apple® Store on your Apple® TV.
2. Select download and ensure your device is within system compatibility.

Exhibit U (<https://support.onepeloton.com/hc/en-us/articles/360045235932-Peloton-App-For-Apple-TV>).

136. Defendant's website contains detailed instructions for how to use the Peloton App on these devices, which results in direct infringement of the '809 Patent.

#### HOW TO USE PELOTON ALL ACCESS ON APPLE® TV

1. Once you open the Peloton App, you will see the following screen:

*Id.*; see also Exhibit V ([https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h\\_01G784JT081Y7DNNTEDQM9A3S7](https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h_01G784JT081Y7DNNTEDQM9A3S7)) (including instructions for “DOWNLOADING THE PELOTON APP FOR ANDROID® TV” and “STARTING A CLASS ON YOUR ANDROID® TV”).

137. Defendant’s customers for the Accused Products directly infringe the ’809 Patent by using the Accused Products as instructed by Defendant.

138. As alleged above, Defendant had knowledge of the ’809 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant’s infringement of the ’809 Patent at a date prior to the filing of the original Complaint. Despite knowing that its actions constitute induced infringement of the ’809 Patent and/or despite knowing that there was a high likelihood that its actions constitute induced infringement of the patent, Peloton nevertheless continues its infringing actions, and continues to make, use, sell, and/or offer for sale the Accused Products.

139. Peloton is liable for contributory infringement of the ’809 Patent under 35 U.S.C § 271(c) by having sold or offered to sell, and continuing to sell or offer for sale the Accused Products within the United States because the Accused Products constitute a material part of the invention embodied in the ’809 Patent, which Peloton knows to be especially made and/or especially adapted for use in infringement of the ’809 Patent, and which is not a staple article or commodity of commerce suitable for substantial non-infringing use.

140. Specifically, Peloton contributes to infringement of the ’809 Patent by, inter alia, promotion, and/or sales of the infringing Accused Products to Peloton’s customers for their use of

the content delivery system as claimed in the '809 Patent. Those customers directly infringe the '809 Patent by using the Accused Products.

141. For example, infringing Accused Products, such as the “Bike” and “Tread” products, are designed to run software that infringes the '809 Patent, and Defendant’s Terms of Service expressly prohibit the use of any other third-party software. Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the “Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not expressly permitted by Peloton in writing.”); 12 (“Downloading and/or installing any third party software and/or applications that are not expressly authorized by Peloton on any Peloton hardware constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton.”). Accordingly, the Accused Products have no substantial non-infringing uses.

142. By engaging in the conduct described herein, Defendant has injured NEC and is thus liable for infringement of the '809 Patent, pursuant to 35 U.S.C. § 271.

143. Defendant has committed these acts of infringement without license or authorization.

144. As a result of Defendant’s infringement of the '809 Patent, Plaintiff has been, and will continue to be, damaged and will suffer irreparable injury unless the infringement is enjoined by this Court pursuant to 35 U.S.C. § 283 and/or the equitable powers of this Court.

145. As a result of Defendant’s infringement of the '809 Patent, Plaintiff has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendant’s past infringement, together with interests and costs.

146. As alleged above, Defendant had knowledge of the '809 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant's infringement of the '809 Patent at a date prior to the filing of the Original Complaint. Despite such knowledge, Defendant has continued its infringing activities. Upon information and belief, Defendant's infringement of the '809 Patent is willful, entitling Plaintiff to enhanced damages pursuant to 35 U.S.C. § 284. This action is therefore exceptional within the meaning of 35 U.S.C. § 285, entitling Plaintiff to its attorneys' fees and expenses.

147. NEC is in compliance with 35 U.S.C. § 287 at least because there is no patented article that is required to be marked.

**Count III: Infringement of the '427 Patent**

148. Plaintiff realleges and incorporates by reference all of the allegations set forth in the preceding paragraphs.

149. On information and belief, Defendant directly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 4, 5, 14–18, 20, 22, 32, and 34–36 of the '427 Patent in violation of 35 U.S.C. § 271(a).

150. On information and belief, Defendant makes, has made, offers to sell, sells and/or uses the Accused Products.

151. On information and belief, the Accused Products use the content distribution systems and methods claimed in the '427 Patent. The Accused Products include an application server system and a connection control server, where the connection control server transmits equipment specification information from user equipment to the application server system and transmits sub content specification information from the application server system to the user equipment as described in and claimed by the '427 Patent. *See* Exhibit F. Thus, Defendant's Accused Products infringe the '427 Patent.

152. For example, use of the Accused Products includes connecting a client device, such as a cellphone, a Peloton Bike, or a Peloton Tread to a Peloton content delivery server. The content delivery server then requests content from a broadcast facility, and then transmits that content to the user device, along with sub content that is overlaid onto the content as described in and claimed by the '427 Patent. In particular, Defendant infringes the '427 Patent at least when its instructors teach classes on the Accused Products, its employees demonstrate the Accused Products in its showrooms, and/or its employees conduct testing on the Accused Products. Defendant further infringes the '427 Patent by training its customers on the use of the Accused Products and/or promotion and/or sales of the Accused Products to Peloton's customers including, but not limited to, end-users, subscribers, and digital connected device platforms for implementing the content delivery system as claimed in the '427 Patent. A non-limiting and exemplary claim chart comparing Accused Products to Claims 1, 4, 5, 14–18, 20, 22, 32, and 34–36 of the '427 Patent is attached hereto as Exhibit F.

153. On information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '427 Patent by directing and controlling its customers' infringing conduct. For example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the '427 Patent at least when Defendant's customers use the Accused Products such as the "Peloton App," "Peloton Bikes" and "Peloton Treads" in an infringing manner as set forth in Exhibit F. *See* Exhibit F. While the Defendant's customers use the Accused Products, Defendant controls the system as a whole and conditions receipt of benefit from the system on customer's infringing activity. For example, Defendant conditions the provision of its services on the customer agreeing to its Terms of Service, which state that "[t]hese Terms are between you and Peloton, and not with the App Provider, and



Peloton (not the App Provider), is solely responsible for the App.” Exhibit K (Peloton Terms of Service) at 7. Defendant’s Terms of Service further provide that Defendant is solely responsible for the investigation, defense, settlement and discharge of any third party claim that the App or the customer’s use of the App infringes intellectual property rights:

- In the event of any third party claim that the App or your possession and use of that App infringes that third party’s intellectual property rights, Peloton will be solely responsible for the investigation, defense, settlement and discharge of any such intellectual property infringement claim to the extent required by these Terms.

Exhibit K (Peloton Terms of Service) at 8.

154. Further, Defendant directs its customers to use the infringing system by requiring the customer to use software that communicates with a server in an infringing manner. For example, Defendant’s Terms of Service include an express prohibition on modifying or using the App in any other:

**Rights in App Granted.** Subject to your compliance with these Terms, Peloton grants to you a limited non-exclusive, non-transferable, revocable license, with no right to sublicense, to download and install a copy of the App on a mobile device or computer that you own or control and to run such copy of the App solely for your own personal non-commercial purposes. You may not copy the App, except for making a reasonable number of copies for backup or archival purposes. Except as expressly permitted in these Terms, you may not:

1. copy, modify or create derivative works based on the App;
2. distribute, transfer, sublicense, lease, lend or rent the App to any third party;
3. reverse engineer, decompile or disassemble the App; or
4. make the functionality of the App available to multiple users through any means.

Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the “Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not expressly permitted by Peloton in writing.”); 12 (“Downloading and/or installing any third party software and/or applications that are not expressly authorized by Peloton on any Peloton hardware



constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton.”).

155. On information and belief, Defendant tethers and conditions the customer’s benefit to using the system, by requiring the customer to pay a subscription for the use of the Accused Products. Exhibit K (Peloton Terms of Service) at 1 (“you must register as a member of the Peloton Service and enter into a subscription agreement for access to our live and on-demand classes, Content and features (a ‘Subscription’)”). Defendant establishes the manner of customers’ infringement, e.g., Defendant does not allow customers to use any third-party software and/or applications that are not directly authorized by Peloton on any Peloton hardware. *Id.* at 7, 9, 12.

156. On information and belief, Defendant maintains control over the use of the Accused Products. For example, Defendant maintains and controls access to content streamed to end user devices. Defendant enables and disables functions that can be performed by the Accused Products in accordance with subscription plans. In addition, Defendant provides software to the Accused Products.

157. As another example, on information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘427 Patent by directing and controlling one or more third party’s infringing conduct. On information and belief, Defendant is liable for joint/divided infringement of, or is vicariously liable for infringement of, the ‘427 Patent at least when Defendant uploads content to and configures one or more third party servers to transmit content to users in an infringing manner.

158. Defendant has known of the ‘427 Patent at a date prior to the filing of this Amended Complaint, and has known of the ‘427 Patent at least upon the filing of the Original Complaint,

which was served on Defendant on July 28, 2022. Defendant has thus had actual knowledge of the '427 Patent for over three months prior to the filing of this Amended Complaint.

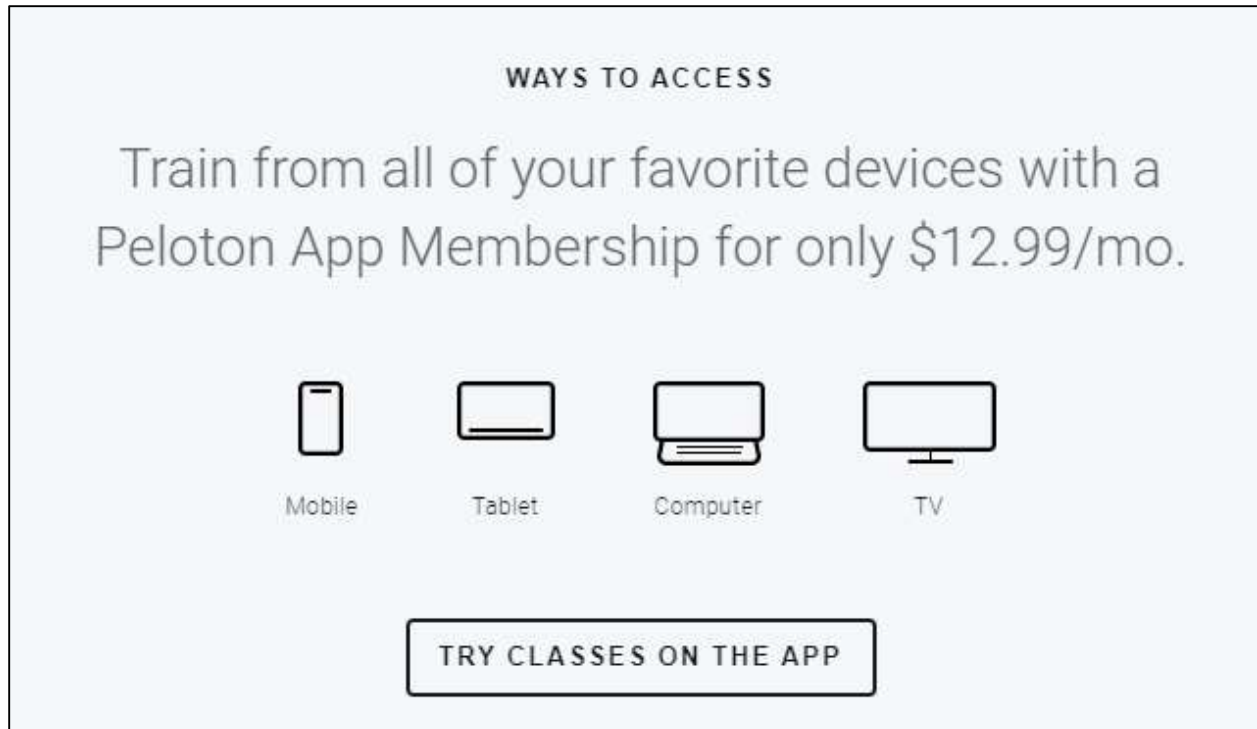
159. Prior to the filing of the Original Complaint, NEC put Defendant on notice of its infringement of the '427 patent at least in a letter dated July 26, 2022. The July 26, 2022 letter was sent to the attention of Hisao Kushi, Peloton's Co-Founder and then Chief Legal Officer. Exhibit L (Letter). The letter was delivered via FedEx Priority Overnight, direct signature required. Exhibit M (FedEx Label). Upon information and belief, the letter was received by Defendant on July 27, 2022, having been signed for by a representative of Defendant at 9:59 a.m. Exhibit N (FedEx Proof of Delivery).

160. The July 26, 2022 letter included detailed claim charts explaining how Defendant infringed the '427 Patent. The July 26, 2022 letter expressly stated that that NEC "intends to enforce its patent rights." Exhibit L. Despite also stating that NEC would be willing "to discuss with Peloton the terms of an appropriate license," and inviting Defendant to "reach out to the undersigned with any questions, or if discussions of such a license would be of interest" (see Exhibit L), Defendant has not done so in the more than three-month period following receipt of the letter.

161. On information and belief, Defendant indirectly infringes, literally and/or under the doctrine of equivalents, at least Claims 1, 4, 5, 14–18, 20, 22, 32, and 34–36 of the '427 Patent.

162. On information and belief, Defendant is liable for inducing infringement of the '427 Patent under 35 U.S.C. § 271(b) by having knowledge of the '427 Patent and knowingly causing or intending to cause, and continuing to knowingly cause or intend to cause, direct infringement of the '427 Patent, with specific intent, by its customers.

163. Specifically, Defendant induces infringement of the '427 Patent by training, promotion, and/or sales of the Accused Products to Peloton customers for their use of the content delivery systems claimed in the '427 Patent. For example, Defendant promotes the Peloton App to customers for their use, in an infringing manner, on TVs and other mobile devices via their website, for example at Exhibit O (<https://onepeloton.com/app>):

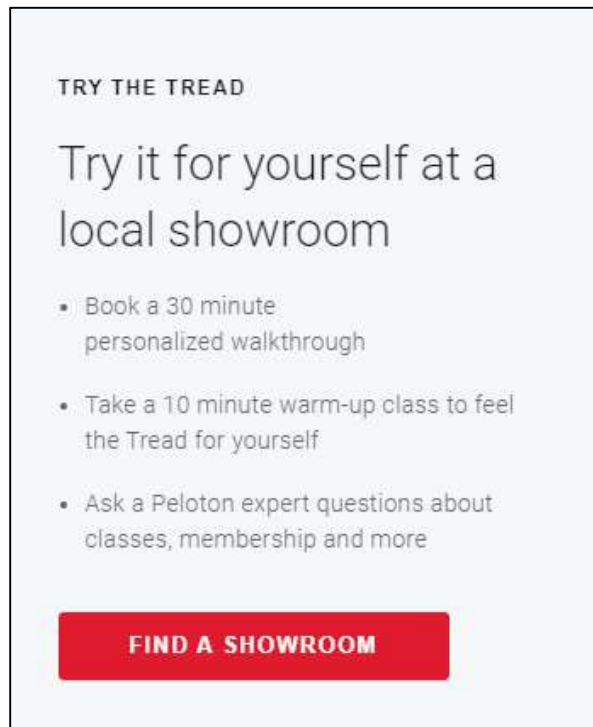


164. As another example, Defendant promotes its Bike and Tread products via its website, and highlights the infringing features, for example at <https://www.onepeloton.com/bikes> and <https://www.onepeloton.com/tread>. Additionally, for example, Defendant maintains a blog that touts the importance of, and encourages customer use of, infringing features. *See, e.g.*, Exhibit W (<https://blog.onepeloton.com/workout-music/>) (“Knowing the playlist ahead of time can help motivate riders, runners or app users, which makes the published playlists of on-demand classes invaluable”);



*Id.*

165. Further, Peloton induces customers and prospective customers to infringe by inviting them to try Peloton Bike and Tread devices at local Peloton showrooms:



<https://www.onepeloton.com/tread>.

## BOOK AN APPOINTMENT

Get a personalized walkthrough of the Peloton Bike, Bike+, Tread, or Guide and take a 10-minute warm-up class to experience it for yourself.

Just looking to browse, get advice or shop apparel? [Visit your local showroom](#)

At Peloton, ensuring the safety of our team and visitors is our number one priority. Before your appointment, a team member will reach out with details about what to bring and expect during your visit.

Here's where you can try Peloton Row in limited Showrooms in the US now:

1. Paramus, NJ
2. Santa Monica, CA
3. Tysons Corner, VA
4. Dallas, TX
5. Troy, MI
6. Austin, TX
7. Dedham, MA
8. Skokie, IL
9. Charlotte, NC
10. Highland Village, TX
11. Tampa, FL
12. Coral Gables, FL
13. San Diego, CA
14. Seattle, WA
15. Santa Clara, CA
16. Alpharetta, GA
17. North Scottsdale, AZ
18. Manhattan West, NY
19. Short Hills, NJ

Peloton Row will be available for test classes in all US Showroom locations later this year.

See Exhibit P (<https://booking.onepeloton.com/#!/choose-location>).

166. On information and belief, Peloton provides demonstrations and user manuals to Peloton customers, which encourage customers to use the Accused Products in an infringing manner. *See, e.g.,* Exhibit Q ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4799136165780/Peloton\\_Bike\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4799136165780/Peloton_Bike_Manual.pdf)); Exhibit R ([https://support.onepeloton.com/hc/en-us/article\\_attachments/360067930212/Peloton\\_Bike\\_\\_User\\_Manual\\_\\_North\\_America\\_.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/360067930212/Peloton_Bike__User_Manual__North_America_.pdf)); Exhibit S ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4406174535828/Peloton\\_Tread\\_Manual\\_NA.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4406174535828/Peloton_Tread_Manual_NA.pdf)); Exhibit T ([https://support.onepeloton.com/hc/en-us/article\\_attachments/4401927651860/Peloton\\_Tread\\_Plus\\_User\\_Manual.pdf](https://support.onepeloton.com/hc/en-us/article_attachments/4401927651860/Peloton_Tread_Plus_User_Manual.pdf)). Additionally, for example, Defendant's website instructs customers to use the Peloton App on various devices, including iOS, iPad, Apple TV, Android mobile and TV, and Amazon Fire TV and Tablet:

Elevate your fitness routine with yoga, strength, stretching, and more with an immersive experience on the biggest screen in your home. With Peloton now available on Apple® TV, stream our full library of at-home fitness classes.

To enjoy our at-home fitness content on Apple® TV, you can sign in with your existing Peloton App or All-Access Membership. If you're new to Peloton, create an account at [members.onepeloton.com](https://members.onepeloton.com) or through your mobile device App and start a 30-day free trial.

Your Peloton Membership or free trial includes access to all of our Apps, just log in using your account information through [iOS, iPad, and Apple® TV](#); [Android® mobile and TV](#), [Amazon® Fire TV and Tablet](#), and our [Roku® channel](#).

#### HOW TO DOWNLOAD THE PELOTON APP FOR APPLE® TV:

1. Search for "Peloton" in the Apple® Store on your Apple® TV.
2. Select download and ensure your device is within system compatibility.

Exhibit U (<https://support.onepeloton.com/hc/en-us/articles/360045235932-Peloton-App-For-Apple-TV>).

167. Defendant's website contains detailed instructions for how to use the Peloton App on these devices, which results in direct infringement of the '427 Patent.

#### HOW TO USE PELOTON ALL ACCESS ON APPLE® TV

1. Once you open the Peloton App, you will see the following screen:

*Id.*; *see also* Exhibit V ([https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h\\_01G784JT081Y7DNNTEDQM9A3S7](https://support.onepeloton.com/hc/en-us/articles/360041344452-Downloading-and-Using-the-Peloton-App-For-Android-TV#h_01G784JT081Y7DNNTEDQM9A3S7)) (including instructions for “DOWNLOADING THE PELOTON APP FOR ANDROID® TV” and “STARTING A CLASS ON YOUR ANDROID® TV”).

168. Additionally, for example, Peloton touts the benefits of providing sub-content in a manner that infringes the ‘427 Patent to its users during a workout. *See* Exhibit W (<https://blog.onepeloton.com/workout-music/>) (“[T]he music played by an instructor can mean the difference between a chill class and one that has the potential to be PR-setting.”); *see also* Exhibit X (<https://blog.onepeloton.com/peloton-track-love/>).

169. On information and belief, Peloton provides demonstrations and user manuals to Peloton customers. Defendant’s customers for the Accused Products directly infringe the ‘427 Patent by using the Accused Products as instructed by Defendant.

170. As alleged above, Defendant had knowledge of the ‘427 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant’s infringement of the ‘427 Patent at a date prior to the filing of the original Complaint. Despite knowing that its actions constitute induced infringement of the ‘427 Patent and/or despite knowing that there was a high likelihood that its actions constitute induced infringement of the patent, Peloton nevertheless continues its infringing actions, and continues to make, use, sell, and/or offer for sale the Accused Products.

171. Peloton is liable for contributory infringement of the ‘427 Patent under 35 U.S.C § 271(c) by having sold or offered to sell, and continuing to sell or offer for sale the Accused Products within the United States because the Accused Products constitute a material part



of the invention embodied in the '427 Patent, which Peloton knows to be especially made and/or especially adapted for use in infringement of the '427 Patent, and which is not a staple article or commodity of commerce suitable for substantial non-infringing use.

172. Specifically, Peloton contributes to infringement of the '427 Patent by, inter alia, promotion, and/or sales of the infringing Accused Products to Peloton's customers for their use of the content delivery system as claimed in the '427 Patent. Those customers directly infringe the '427 Patent by using the Accused Products.

173. For example, infringing Accused Products, such as the "Bike" and "Tread" products, are designed to run software that infringes the '427 Patent, and Defendant's Terms of Service expressly prohibit the use of any other third-party software. Exhibit K (Peloton Terms of Service) at 7; *see also id* at 9 (prohibiting the "Download and/or install [of] any third party software and/or application on any Peloton hardware ... that is not expressly permitted by Peloton in writing."); 12 ("Downloading and/or installing any third party software and/or applications that are not expressly authorized by Peloton on any Peloton hardware constitutes a breach of these Terms; any such downloading or installation is done at your own risk and may void any applicable warranty or support commitments by Peloton."). Accordingly, the Accused Products have no substantial non-infringing uses.

174. By engaging in the conduct described herein, Defendant has injured NEC and is thus liable for infringement of the '427 Patent, pursuant to 35 U.S.C. § 271.

175. Defendant has committed these acts of infringement without license or authorization.



176. As a result of Defendant's infringement of the '427 Patent, Plaintiff has been, and will continue to be, damaged and will suffer irreparable injury unless the infringement is enjoined by this Court pursuant to 35 U.S.C. § 283 and/or the equitable powers of this Court.

177. As a result of Defendant's infringement of the '427 Patent, Plaintiff has suffered monetary damages and is entitled to a monetary judgment in an amount adequate to compensate for Defendant's past infringement, together with interests and costs.

178. As alleged above, Defendant had knowledge of the '427 Patent at a date prior to the filing of this Amended Complaint and knew, should have known, or was willfully blind to the fact of Defendant's infringement of the '427 Patent at a date prior to the filing of the Original Complaint. Despite such knowledge, Defendant has continued its infringing activities. Upon information and belief, Defendant's infringement of the '427 Patent is willful, entitling Plaintiff to enhanced damages pursuant to 35 U.S.C. § 284. This action is therefore exceptional within the meaning of 35 U.S.C. § 285, entitling Plaintiff to its attorneys' fees and expenses.

179. NEC is in compliance with 35 U.S.C. § 287 at least because there is no patented article that is required to be marked.

#### **DEMAND FOR JURY TRIAL**

180. Plaintiff demands a trial by jury of any and all causes of action.

#### **PRAYER FOR RELIEF**

181. WHEREFORE, Plaintiff prays for the following relief:

182. That Defendant be adjudged to have directly infringed the patents-in-suit either literally or under the doctrine of equivalents, and to have indirectly infringed the patents-in-suit by inducement and contributory infringement;

a. Entry of a preliminary and/or permanent injunction against Defendant pursuant to 35 U.S.C. § 283 and/or the equitable powers of the Court to prevent further infringement of the patents-in-suit;

b. An award of damages to Plaintiff and against Defendant pursuant to 35 U.S.C. § 284 adequate to compensate Plaintiff for the Defendant's past infringement and any continuing or future infringement, including compensatory damages, lost profits, and/or a reasonable royalty;

c. A declaration that Defendant's infringement is willful and an award of enhanced damages, in the form of treble damages, pursuant to 35 U.S.C. § 284;

d. An accounting of all infringing sales and damages including, but not limited to, those sales and damages not presented at trial;

e. An assessment of pre-judgment and post-judgment interest and costs against Defendant, together with an award of such interest and costs, in accordance with 35 U.S.C. § 284;

f. That Defendant be directed to pay enhanced damages, including Plaintiff's attorneys' fees incurred in connection with this lawsuit pursuant to 35 U.S.C. § 285; and

g. That Plaintiff be granted such other and further relief as this Court may deem just and proper.

Dated: October 31, 2022

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